

Sequence Listing

- <110> Ashkenazi, Avi J.
 Baker, Kevin P.
 Botstein, David
 Desnoyers, Luc
 Eaton, Dan L.
 Ferrara, Napoleone
 Fong, Sherman
 Gerber, Hanspeter
 Gerritsen, Mary E.
 Goddard, Audrey
 Godowski, Paul J.
 Grimaldi, J. Christopher
 Gurney, Austin L.
 Kljavin, Ivar J.
 Napier, Mary A.
 Pan, James
 Paoni, Nicholas F.
 Roy, Margaret Ann
 Stewart, Timothy A.
 Tumas, Daniel
 Watanabe, Colin K.
 Williams, P. Mickey
 Wood, William I.
 Zhang, Zemin
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| Table 1. Demographic characteristics of the study population | |
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| Age (years) | Mean ± SD |
| Male | 50.5 ± 10.2 |
| Female | 51.2 ± 11.5 |
| Marital status | |
| Married | 78.5% |
| Single | 21.5% |
| Education level | |
| High school or above | 65.2% |
| Below high school | 34.8% |
| Occupation | |
| White collar | 42.1% |
| Blue collar | 57.9% |
| Income (USD/month) | |
| < 1000 | 15.3% |
| 1000-2000 | 32.7% |
| 2000-3000 | 28.9% |
| > 3000 | 23.1% |
| Health insurance | |
| Yes | 89.4% |
| No | 10.6% |
| Smoking status | |
| Smoker | 28.5% |
| Non-smoker | 71.5% |
| Alcohol consumption | |
| Regular | 12.8% |
| Occasional | 35.4% |
| Never | 51.8% |

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| Trp Ala Ser Leu | Leu Thr Leu Phe Leu Ser | Ile Val Ala Leu | Thr |
| | 155 | 160 | 165 |
| Ala Gly Thr Lys | Thr Leu Gln His Asn | Leu Ala Gly Arg Gly | Phe |
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| Thr Phe Pro Glu | Ala Lys Trp Asn Thr | Thr Ala Arg Val Phe | Ser |
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| | 260 | 265 | 270 |
| Leu Tyr Phe Phe | Gly Ile Leu Phe Asn | Gly Leu Thr Leu Gly | Leu |
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| Leu Glu Ala Pro | Ser Val Leu Leu Ser | Ile Phe Ile Tyr Asn | Ala |
| | 365 | 370 | 375 |
| Ser Lys Pro Gln | Val Pro Glu Tyr Ala | Pro Arg Gln Glu Arg | Ile |
| | 380 | 385 | 390 |
| Arg Asp Leu Ser | Gly Asn Leu Trp Glu | Arg Ser Ser Gly Asp | Gly |
| | 395 | 400 | 405 |
| Glu Glu Leu Glu | Arg Leu Thr Lys Pro | Lys Ser Asp Glu Ser | Asp |
| | 410 | 415 | 420 |
| Glu Asp Thr Phe | | | |

<210> 15
<211> 755
<212> DNA
<213> Homo sapiens

<400> 15
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ctatacctac tgtagcttct ccacgtatgg accctaaagg ctactgctgc 150
tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 200
cactagaagc tcttctgagg gaggtaatta aaaaacagtg gaatggaaaa 250
acagtgcgtgt agtcacacctg taatatgctc cttgtcaaca atgtatacat 300
tcctgctagg tgccatattc attgctttta gctcaagtcg catcttacta 350
gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 400
tgtgaatgtg tgctcagaac tgggtgaagct agttttctgt gtgcttgtgt 450
cattctgtgt tataaagaaa gatcatcaaa gtagaaattt gaaatatgct 500
tcctggaagg aattctctga tttcatgaag tgggccattc ctgcctttct 550
ttatttcctg gataacttga ttgtcttcta tgtcctgtcc tatcttcaac 600
cagccatggc tgttatcttc tcaaatttta gcattataac aacagctctt 650
ctattcagga tagtgctgaa gaggcgtcta aactggatcc agtgggcttc 700
cctcctgact ttatttttgt ctattgtggc cttgactgcc gggactaaaa 750
cttta 755

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 16
ctatacctac tgtagcttct 20

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcagagaatt ccttccagga 20

<210> 18
<211> 40
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 18

acagtgtctgt agtcatcctg taatatgctc cttgtcaaca 40

<210> 19

<211> 2142

<212> DNA

<213> Homo sapiens

<400> 19

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gcggcctgcg gggcagagga gcatcccgtc taccaggtcc caagcggcgt 150
ggcccgcggg tcatggocaa aggagaaggc gccgagagcg gctccgcggc 200
ggggctgcta cccaccagca tcctccaaag cactgaacgc ccggcccagg 250
tgaagaaaga accgaaaaag aagaaacaac agttgtctgt ttgcaacaag 300
ctttgctatg cacttggggg agccccctac caggtgacgg gctgtgccct 350
gggtttcttc cttcagatct acctattgga tgtggctcag gtggggccctt 400
totctgcctc catcatcctg tttgtgggcc gagcctggga tgccatcaca 450
gacccccctg tgggcctctg catcagcaaa tccccctgga cctgcctggg 500
tcgccttatg ccctggatca tcttctccac gccctggcc gtcattgcct 550
acttcctcat ctggttcgtg ccgacttcc cacacggcca gacctattgg 600
tacctgcttt totattgcct ctttgaaaca atggtcacgt gtttccatgt 650
tcctactcg gctctacca tgttcacag caaccgagca gactgagcgg 700
gattctgcca ccgcctatcg gatgactgtg gaagtgtctg gcacagtgt 750
gggcacggcg atccaggac aaatcgtggg ccaagcagac acgccttggt 800
tccaggactt caatagctct acagtagctt cacaagtgc caaccataca 850
catggcacca cttcacacag ggaaacgcaa aaggcatacc tgctggcagc 900
gggggtcatt gtctgtatct atataatctg tgctgtcatc ctgatcctgg 950
gcgtgcggga gcagagagaa ccctatgaag ccagcagtc tgagccaatc 1000
gcctacttcc ggggcctacg gctggtcacg agccacggcc catacatcaa 1050
acttattact ggcttcctct tcacctcctt ggctttcatg ctggtggagg 1100
ggaactttgt cttgttttgc acctacacct tgggcttcgg caatgaattc 1150
cagaatctac tcctggccat catgctctcg gccactttaa ccattcccat 1200
ctggcagtgg ttcttgaccc ggtttgcaa gaagacagct gtatatgttg 1250

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Asp | Ser | Ala | Thr | Ala | Tyr | Arg | Met | Thr | Val | Glu | Val | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Thr | Val | Leu | Gly | Thr | Ala | Ile | Gln | Gly | Gln | Ile | Val | Gly | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Asp | Thr | Pro | Cys | Phe | Gln | Asp | Phe | Asn | Ser | Ser | Thr | Val | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Gln | Ser | Ala | Asn | His | Thr | His | Gly | Thr | Thr | Ser | His | Arg | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | Gln | Lys | Ala | Tyr | Leu | Leu | Ala | Ala | Gly | Val | Ile | Val | Cys | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Tyr | Ile | Ile | Cys | Ala | Val | Ile | Leu | Ile | Leu | Gly | Val | Arg | Glu | Gln |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Glu | Pro | Tyr | Glu | Ala | Gln | Gln | Ser | Glu | Pro | Ile | Ala | Tyr | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Gly | Leu | Arg | Leu | Val | Met | Ser | His | Gly | Pro | Tyr | Ile | Lys | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ile | Thr | Gly | Phe | Leu | Phe | Thr | Ser | Leu | Ala | Phe | Met | Leu | Val | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Gly | Asn | Phe | Val | Leu | Phe | Cys | Thr | Tyr | Thr | Leu | Gly | Phe | Arg | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Phe | Gln | Asn | Leu | Leu | Leu | Ala | Ile | Met | Leu | Ser | Ala | Thr | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Thr | Ile | Pro | Ile | Trp | Gln | Trp | Phe | Leu | Thr | Arg | Phe | Gly | Lys | Lys |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Thr | Ala | Val | Tyr | Val | Gly | Ile | Ser | Ser | Ala | Val | Pro | Phe | Leu | Ile |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Leu | Val | Ala | Leu | Met | Glu | Ser | Asn | Leu | Ile | Ile | Thr | Tyr | Ala | Val |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ala | Val | Ala | Ala | Gly | Ile | Ser | Val | Ala | Ala | Ala | Phe | Leu | Leu | Pro |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Trp | Ser | Met | Leu | Pro | Asp | Val | Ile | Asp | Asp | Phe | His | Leu | Lys | Gln |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Pro | His | Phe | His | Gly | Thr | Glu | Pro | Ile | Phe | Phe | Ser | Phe | Tyr | Val |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Phe | Phe | Thr | Lys | Phe | Ala | Ser | Gly | Val | Ser | Leu | Gly | Ile | Ser | Thr |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Leu | Ser | Leu | Asp | Phe | Ala | Gly | Tyr | Gln | Thr | Arg | Gly | Cys | Ser | Gln |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Pro | Glu | Arg | Val | Lys | Phe | Thr | Leu | Asn | Met | Leu | Val | Thr | Met | Ala |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Pro | Ile | Val | Leu | Ile | Leu | Leu | Gly | Leu | Leu | Leu | Phe | Lys | Met | Tyr |
| | | | | 410 | | | | | 415 | | | | | 420 |

Pro Ile Asp Glu Glu Arg Arg Arg Gln Asn Lys Lys Ala Leu Gln
425 430 435

Ala Leu Arg Asp Glu Ala Ser Ser Ser Gly Cys Ser Glu Thr Asp
440 445 450

Ser Thr Glu Leu Ala Ser Ile Leu
455

<210> 21
<211> 571
<212> DNA
<213> Homo sapiens

<400> 21
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accctatgaa gccacgacgt ctgagccaat cgcctacttc cggggcctac 150
ggctgggtcat gagccacggc ccatacatca aacttattac tggcttcctc 200
ttcacctcct tggttttcat gctgggtggag gggaactttg tcttggtttg 250
cacctacacc ttgggcttcc gcaatgaatt ccagaatcta ctcttgacca 300
tcatgtctct ggccacttta accattccca tctggcagtg gttcttgacc 350
cggtttgga agaagacagc tgtatatgtt gggatctcat cagcagtgcc 400
atttctcatc ttgggtggccc tcatggagag taacctcatc attacatatg 450
cggtagctgt ggcagctggc atcagtggtg cagctgcctt ctactaccc 500
tggtccatgc tgctgatgt cattgacgac ttccatctga agcagcccca 550
cttccatgga accgagccca t 571

<210> 22
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 22
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aaacagaaaa cctgttagaa atgtgggtgt ttccagcaagg cctcagtttc 150
cttccttcag cccttgtaat ttggacatct gctgctttca tattttcata 200
cattactgca gtaacactcc accatataga cccggcttta ccttatatca 250
gtgacactgg tacagtagct ccagaaaaat gcttatttgg ggcaatgcta 300
aatattgagg cagttttatg cattgctacc atttatgttc gttataagca 350
agttcatgct ctgagtcctg aagagaacgt tatcatcaaa ttaaacaagg 400
ctggccttgt acttgggaata ctgagttgtt taggactttc tattgtggca 450

aacttccaga aaacaaccct ttttgctgca catgtaagtg gagctgtgct 500
 tacctttgggt atgggctcat tatatatgtt tgttcagacc atcctttcct 550
 accaaatgca gcccaaatc catggcaaac aagtcttctg gatcagactg 600
 ttgttggtta tctgggtgtg agtaagtgca cttagcatgc tgacttgctc 650
 atcagttttg cacagtggca attttgggac tgatttagaa cagaaactcc 700
 attggaaccc cgaggacaaa ggttatgtgc ttcacatgat cactactgca 750
 gcagaatgggt ctatgtcatt ttccttcttt ggttttttcc tgacttacat 800
 tcgtgatttt cagaaaattt ctttacgggt ggaagccaat ttacatggat 850
 taaccctcta tgacactgca ccttgcccta ttaacaatga acgaacacgg 900
 ctactttcca gagatatttg atgaaaggat aaaatatttc tgtaatgatt 950
 atgatttctca gggattgggg aaaggttcac agaagttgct tattcttctc 1000
 tgaaattttc aaccacttaa tcaaggctga cagtaacact gatgaatgct 1050
 gataatcagg aaacatgaaa gaagccattt gatagattat tctaaaggat 1100
 atcatcaaga agactattaa aaacacctat gcctatactt ttttatctca 1150
 gaaaataaag tcaaaagact atg 1173

<210> 23
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 23
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 Val Ile Trp Thr Ser Ala Ala Phe Ile Phe Ser Tyr Ile Thr Ala
 20 25 30
 Val Thr Leu His His Ile Asp Pro Ala Leu Pro Tyr Ile Ser Asp
 35 40 45
 Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu
 50 55 60
 Asn Ile Ala Ala Val Leu Cys Ile Ala Thr Ile Tyr Val Arg Tyr
 65 70 75
 Lys Gln Val His Ala Leu Ser Pro Glu Glu Asn Val Ile Ile Lys
 80 85 90
 Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly
 95 100 105
 Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala
 110 115 120
 His Val Ser Gly Ala Val Leu Thr Phe Gly Met Gly Ser Leu Tyr
 125 130 135

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Phe | Val | Gln | Thr | Ile | Leu | Ser | Tyr | Gln | Met | Gln | Pro | Lys | Ile | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Gly | Lys | Gln | Val | Phe | Trp | Ile | Arg | Leu | Leu | Leu | Val | Ile | Trp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Cys | Gly | Val | Ser | Ala | Leu | Ser | Met | Leu | Thr | Cys | Ser | Ser | Val | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| His | Ser | Gly | Asn | Phe | Gly | Thr | Asp | Leu | Glu | Gln | Lys | Leu | His | Trp | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Asn | Pro | Glu | Asp | Lys | Gly | Tyr | Val | Leu | His | Met | Ile | Thr | Thr | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Glu | Trp | Ser | Met | Ser | Phe | Ser | Phe | Phe | Gly | Phe | Phe | Leu | Thr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Ile | Arg | Asp | Phe | Gln | Lys | Ile | Ser | Leu | Arg | Val | Glu | Ala | Asn | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | His | Gly | Leu | Thr | Leu | Tyr | Asp | Thr | Ala | Pro | Cys | Pro | Ile | Asn | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Glu | Arg | Thr | Arg | Leu | Leu | Ser | Arg | Asp | Ile | | | | | |
| | | | | 260 | | | | | 265 | | | | | | |

<210> 24
 <211> 485
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 14, 484
 <223> unknown base

<400> 24
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 gagcggagat cctcaaacgg cctagtgctt cgcgcttccg gagaaaatca 150
 gcggtctaata taattcctct ggtttgttga agcagttacc aagaatcttc 200
 aaccctttcc cacaaaagct aattgagtac acgttcctgt tgagtacacg 250
 ttctgtttga ttacaaaag gtgcaggtat gagcaggtct gaagactaac 300
 attttgtgaa gttgtaaaac agaaaacctg ttagaaatgt ggtggtttca 350
 gcaaggcctc agtttccttc cttcagccct tgtaatttgg acatctgctg 400
 ctttcatatt ttcatacatt actgcagtaa cactccacca tatagaccgg 450
 gctttacctt atatcagtga cactggtaca gtanc 485

<210> 25
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
acctgttaga aatgtggtgg tttcagcaag gcctcagttt 40

<210> 26
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
ggagatagct gctatgggtt cttcaggcac aacttaacat gggaag 46

<210> 27
<211> 1399
<212> DNA
<213> Homo sapiens

<400> 27
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ctgccccgcg ggccgggggtg cggagccgac atgcgccccg ttctcggcct 100
ccttctgggtc ttccgcccgt gcaccttcgc cttgtacttg ctgtcgacgc 150
gactgccccg cgggcccggaga ctgggctcca ccgaggaggc tggaggcagg 200
tcgctgtggt tccccctcga cctggcagag ctgcgggagc tctctgaggt 250
ccttcgagag taccggaagg agcaccaggc ctacgtgttc ctgctcttct 300
gcgggcgcta cctctacaaa cagggttttg ccatccccgg ctccagcttc 350
ctgaatgttt tagctgggtgc cttgtttggg ccatggctgg ggcttctgct 400
gtgctgtgtg ttgacctcgg tgggtgccac atgctgctac ctgctctcca 450
gtattttttg caaacagttg gtggtgtcct actttcctga taaagtggcc 500
ctgctgcaga gaaagggtga ggagaacaga aacagcttgt tttttttctt 550
attgtttttg agacttttcc ccatgacacc aaactgggtc ttgaacctct 600
cggccccaat tctgaacatt cccatcgtgc agttcttctt ctcagttctt 650
atcggtttga tcccatataa tttcatctgt gtgcagacag ggtccatcct 700
gtcaacccta acctctctgg atgctctttt ctctcgggac actgtcttta 750
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aaatttagtc agaaacatct gcaattgaat gaaacaagta ctgctaata 850
tatacacagt agaaaagaca catgatctgg attttctgtt tgccacatcc 900
ctggactcag ttgcttattt gtgtaatgga tgtggctctc taaagcccct 950
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tgcagtgtct tttcagaaag gacactctgc tcttgaaggt gtattacatc 1050
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 agaaaatgct gtttgtggcc gggcgcggtg gctcacgcct gtaatcccag 1150
 cactttggga ggccgaggcc ggtgattcac aaggtcagga gttcaagacc 1200
 agcctggcca agatggtgaa atcctgtctc taataaaaat acaaaaatta 1250
 gccaggcgtg gtggcaggca cctgtaatcc cagctactcg ggaggctgag 1300
 gcaggagaat tgcttgaacc aaggtggcag aggttgcaat aagccaagat 1350
 cacaccactg cactccagcc tgggtgatag agtgagacac tgtcttgac 1399

<210> 28
 <211> 264
 <212> PRT
 <213> Homo sapiens

<400> 28
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 1 5 10 15
 Phe Ala Leu Tyr Leu Leu Ser Thr Arg Leu Pro Arg Gly Arg Arg
 20 25 30
 Leu Gly Ser Thr Glu Glu Ala Gly Gly Arg Ser Leu Trp Phe Pro
 35 40 45
 Ser Asp Leu Ala Glu Leu Arg Glu Leu Ser Glu Val Leu Arg Glu
 50 55 60
 Tyr Arg Lys Glu His Gln Ala Tyr Val Phe Leu Leu Phe Cys Gly
 65 70 75
 Ala Tyr Leu Tyr Lys Gln Gly Phe Ala Ile Pro Gly Ser Ser Phe
 80 85 90
 Leu Asn Val Leu Ala Gly Ala Leu Phe Gly Pro Trp Leu Gly Leu
 95 100 105
 Leu Leu Cys Cys Val Leu Thr Ser Val Gly Ala Thr Cys Cys Tyr
 110 115 120
 Leu Leu Ser Ser Ile Phe Gly Lys Gln Leu Val Val Ser Tyr Phe
 125 130 135
 Pro Asp Lys Val Ala Leu Leu Gln Arg Lys Val Glu Glu Asn Arg
 140 145 150
 Asn Ser Leu Phe Phe Phe Leu Leu Phe Leu Arg Leu Phe Pro Met
 155 160 165
 Thr Pro Asn Trp Phe Leu Asn Leu Ser Ala Pro Ile Leu Asn Ile
 170 175 180
 Pro Ile Val Gln Phe Phe Phe Ser Val Leu Ile Gly Leu Ile Pro
 185 190 195
 Tyr Asn Phe Ile Cys Val Gln Thr Gly Ser Ile Leu Ser Thr Leu
 200 205 210

Thr Ser Leu Asp Ala Leu Phe Ser Trp Asp Thr Val Phe Lys Leu
 215 220 225
 Leu Ala Ile Ala Met Val Ala Leu Ile Pro Gly Thr Leu Ile Lys
 230 235 240
 Lys Phe Ser Gln Lys His Leu Gln Leu Asn Glu Thr Ser Thr Ala
 245 250 255
 Asn His Ile His Ser Arg Lys Asp Thr
 260

<210> 29
 <211> 1292
 <212> DNA
 <213> Homo sapiens

<400> 29
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 ggtttccgaa ctgccagctc agaataggaa aataacttgg gattttatat 150
 tggaagacat ggatcttgct gccaacgaga tcagcattta tgacaaactt 200
 tcagagactg ttgatttggg gagacagacc ggccatcagt gtggcatgtc 250
 agagaaggca attgaaaaat ttatcagaca gctgctggaa aagaatgaac 300
 ctcagagacc cccccgcag tatcctctcc ttatagttgt gtataagggt 350
 ctcgcaacct tgggattaat cttgctcact gcctactttg tgattcaacc 400
 tttcagccca ttagcacctg agccagtgtt ttctggagct cacacctggc 450
 gctcactcat ccatcacatt aggctgatgt ccttgcccat tgccaagaag 500
 tacatgtcag aaaataaggg agttcctctg catgggggtg atgaagacag 550
 accctttcca gactttgacc cctggtggac aaacgactgt gagcagaatg 600
 agtcagagcc cattcctgcc aactgcaactg gctgtgcca gaaacacctg 650
 aaggtgatgc tcctggaaga cgcccaagg aaatttgaga ggctccatcc 700
 actggtgatc aagacgggaa agccctgtt ggaggaagag attcagcatt 750
 ttttgtgcca gtacctgag gcgacagaag gcttctctga agggtttttc 800
 gccaaagtggg ggcgctgctt tcctgagcgg tggttcccat ttccttatcc 850
 atggaggaga cctctgaaca gatcacaaat gttacgtgag ctttttctctg 900
 ttttactca cctgccattt caaaaagatg cctctttaa caagtgtctc 950
 tttcttcacc cagaacctgt tgtggggagt aagatgcata agatgcctga 1000
 cctattttatc attggcagcg gtgaggccat gttgcagctc atccctccct 1050
 tccagtgccg aagacattgt cagtctgtgg ccattgccaat agagccaggg 1100
 gatatcggt atgtcgacac caccactgg aaggtctacg ttatagccag 1150

aggggtccag ccttttgtca tctgcatgg aaccgcttcc tcagaactgt 1200
 aggaaataga actgtgcaca ggaacagctt ccagagccga aaaccagggt 1250
 gaaaggggaa aaataaaaaac aaaaacgatg aaactgcaaa aa 1292

<210> 30
 <211> 347
 <212> PRT
 <213> Homo sapiens

<400> 30
 Met Asp Leu Ala Ala Asn Glu Ile Ser Ile Tyr Asp Lys Leu Ser
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 Glu Thr Val Asp Leu Val Arg Gln Thr Gly His Gln Cys Gly Met
 20 25 30
 Ser Glu Lys Ala Ile Glu Lys Phe Ile Arg Gln Leu Leu Glu Lys
 35 40 45
 Asn Glu Pro Gln Arg Pro Pro Pro Gln Tyr Pro Leu Leu Ile Val
 50 55 60
 Val Tyr Lys Val Leu Ala Thr Leu Gly Leu Ile Leu Leu Thr Ala
 65 70 75
 Tyr Phe Val Ile Gln Pro Phe Ser Pro Leu Ala Pro Glu Pro Val
 80 85 90
 Leu Ser Gly Ala His Thr Trp Arg Ser Leu Ile His His Ile Arg
 95 100 105
 Leu Met Ser Leu Pro Ile Ala Lys Lys Tyr Met Ser Glu Asn Lys
 110 115 120
 Gly Val Pro Leu His Gly Gly Asp Glu Asp Arg Pro Phe Pro Asp
 125 130 135
 Phe Asp Pro Trp Trp Thr Asn Asp Cys Glu Gln Asn Glu Ser Glu
 140 145 150
 Pro Ile Pro Ala Asn Cys Thr Gly Cys Ala Gln Lys His Leu Lys
 155 160 165
 Val Met Leu Leu Glu Asp Ala Pro Arg Lys Phe Glu Arg Leu His
 170 175 180
 Pro Leu Val Ile Lys Thr Gly Lys Pro Leu Leu Glu Glu Glu Ile
 185 190 195
 Gln His Phe Leu Cys Gln Tyr Pro Glu Ala Thr Glu Gly Phe Ser
 200 205 210
 Glu Gly Phe Phe Ala Lys Trp Trp Arg Cys Phe Pro Glu Arg Trp
 215 220 225
 Phe Pro Phe Pro Tyr Pro Trp Arg Arg Pro Leu Asn Arg Ser Gln
 230 235 240
 Met Leu Arg Glu Leu Phe Pro Val Phe Thr His Leu Pro Phe Pro
 245 250 255

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asp | Ala | Ser | Leu | Asn | Lys | Cys | Ser | Phe | Leu | His | Pro | Glu | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Val | Gly | Ser | Lys | Met | His | Lys | Met | Pro | Asp | Leu | Phe | Ile | Ile |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Ser | Gly | Glu | Ala | Met | Leu | Gln | Leu | Ile | Pro | Pro | Phe | Gln | Cys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Arg | Arg | His | Cys | Gln | Ser | Val | Ala | Met | Pro | Ile | Glu | Pro | Gly | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ile | Gly | Tyr | Val | Asp | Thr | Thr | His | Trp | Lys | Val | Tyr | Val | Ile | Ala |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Arg | Gly | Val | Gln | Pro | Leu | Val | Ile | Cys | Asp | Gly | Thr | Ala | Phe | Ser |
| | | | | 335 | | | | | 340 | | | | | 345 |

Glu Leu

<210> 31
 <211> 478
 <212> DNA
 <213> Homo sapiens

<400> 31
 ccacggtgtc cgttcttcgc ccggcggcag ctgtccccga ggcgggagga 50
 gcccgagggg cgcgagcccc gcatgaatca ttgtagtcaa tcattttcca 100
 gttctcagcc gttcagttgt gatcaaggga cacgtggttt ccgaactgcc 150
 agctcagaat aggaaaataa cttgggattt tatattggaa gacatggatc 200
 ttgctgccaa cgagatcagc atttatgaca aactttcaga gactgttgat 250
 ttggtgagac agaccggcca tcagtgtggc atgtcagaga aggcaattga 300
 aaaatttatc agacagctgc tggaaaagaa tgaacctcag agaccccccc 350
 cgcagtatcc tctccttata gttgtgtata aggttctcgc aaccttgga 400
 ttaatcttgc tcaactgcta ctttgtgatt caacctttca gccattagc 450
 acctgagcca gtgctttgtg gagctcac 478

<210> 32
 <211> 3531
 <212> DNA
 <213> Homo sapiens

<400> 32
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 ccaactgatga ggcaggggtcc ccaacttcag ctgcagcagc tgcagcagct 100
 gcagagcgct gctcctggct ggtgccactg gtgcgcacgc tgctagaccg 150
 tgccatagag ccgctggggc tgcagtgggg actgccctcc ctgccacca 200
 ccaatggcag cccacacctt tttgaagact tccaggcttt ttgtgccaca 250

cccgaatggc gccacttcat cgacaaacag gtacagccaa ccatgtccca 300
 gttcgaaatg gacacgtatg ctaagagcca cgaccttatg tcaggtttct 350
 ggaatgcctg ctatgacatg cttatgagca gtgggcagcg gcgccagtgg 400
 gagcgcgccc agagtogtgc ggccttccag gagctggtgc tggaacctgc 450
 gcagaggcgg gcgcgcctgg aggggctacg ctacacggca gtgctgaagc 500
 agcaggcaac gcagcactcc atggccctgc tgcactgggg ggcgctgtgg 550
 cgccagctcg ccagcccatg tggggcctgg gcgctgaggg aactcccat 600
 cccccgctgg aaactgtcca gcgccgagac atattcacgc atgcgtctga 650
 agctggtgcc caaccatcac ttcgaccctc acctggaagc cagcgctctc 700
 cgagacaatc tgggtgaggt tcccctgaca cccaccgagg aggcctcact 750
 gcctctggca gtgaccaaag aggccaaagt gagcacccca cccgagttgc 800
 tgcaggagga ccagctcggc gaggacgagc tggctgagct ggagaccccg 850
 atggaggcag cagaactgga tgagcagcgt gagaagctgg tgctgtcggc 900
 cgagtgccag ctggtgacgg tagtgccgt ggtcccaggg ctgctggagg 950
 tcaccacaca gaatgtatac ttctacgatg gcagcactga gcgcgtggaa 1000
 accgaggagg gcatcggcta tgatttcggc cggccactgg cccagctgcg 1050
 tgagggtccac ctgcggcggt tcaacctgcg ccgttcagca cttgagctct 1100
 tctttatcga tcaggccaac tacttctca acttcccatg caagggtgggc 1150
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 catccccacc catacccagg tacggaacca ggtgtactcg tggctcctgc 1250
 gcctacggcc cccctctcaa ggctaccta gcagccgctc ccccaggag 1300
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 caacttcgag tacttgatgc aactcaacac cattgcgggg cggacctaca 1400
 atgacctgtc tcagtaccct gtgttccct gggctcctgca ggactacgtg 1450
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 gcccatcggg gtggtgaacc ccaagcatgc ccagctcgtg agggagaagt 1550
 atgaaagctt tgaggacca gcaggacca ttgacaagtt cactatggc 1600
 acccactact ccaatgcagc aggcgtgatg cactacctca tccgcgtgga 1650
 gcccttcacc tccctgcagc tccagctgca aagtggccgc tttgactgct 1700
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 agccctgccg atgtgaagga gctcatcccg gaattcttct actttcctga 1800
 cticctggag aaccagaacg gttttgacct gggctgtctc cagctgacca 1850

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gacttcatcc agcagcaccg ccaggctctg gagtcggagt atgtgtctgc 1950
acacctacac gagtggatcg acctcatctt tggctacaag cagcgggggc 2000
cagccgccga ggaggccctc aatgtcttct attactgcac ctatgagggg 2050
gctgtagacc tggaccatgt gacagatgag cgggaacgga aggctctgga 2100
gggcattatc agcaactttg ggcagactcc ctgtcagctg ctgaaggagc 2150
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gcactacccc gtggcaagct gttgagccag ctgagctgcc accttgatgt 2550
agtaacctgc cttgcaactg acacctgtgg catctacctc atctcaggct 2600
ccggggacac cacgtgcatg gtgtggcggc tcctgcatca ggggtgtctg 2650
tcagtaggcc tggcaccaaa gcctgtgcag gtccctgtatg ggcattggggc 2700
tgcagtgagc tgtgtggcca tcagcactga acttgacatg gctgtgtctg 2750
gatctgagga tggaaactgtg atcatacaca ctgtacgccg cggacagttt 2800
gtagcggcac tacggcctct gggtgccaca ttccctggac ctattttcca 2850
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aacgtcctgg gggccaggtc acctactcct tgcacctgta ttcagtcaat 2950
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ggtgacagag gactttgtgt tgctgggcac cggccagtgc gccctgcaca 3050
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gtggccatcc gcagcgtggc cgtgaccaag gagcgagcc acgtgctggt 3150
gggcctggag gatggcaagc tcatcgtggt ggtcgcgggg cagccctctg 3200
aggtgcgcag cagccagttc gcgcggaagc tgtggcggtc ctgcgcgcgc 3250
atctcccagg tgtcctcggg agagacggaa tacaacccta ctgaggcgcg 3300
ctgaacctgg ccagtccggc tgctcgggcc ccgccccggg caggcctggc 3350
ccgggaggcc ccgcccagaa gtcggcgga acaccccggt gtgggcagcc 3400
cagggggtga gcggggccca ccctgccag ctgaggatt ggcggcgat 3450

gttaccacct cagggattgg cgggcggaag tcccggccct cgccggctga 3500
 ggggccgccc tgaggccag cactggcgtc t 3531

<210> 33
 <211> 1003
 <212> PRT
 <213> Homo sapiens

<400> 33
 Met Ser Gln Phe Glu Met Asp Thr Tyr Ala Lys Ser His Asp Leu
 1 5 10 15
 Met Ser Gly Phe Trp Asn Ala Cys Tyr Asp Met Leu Met Ser Ser
 20 25 30
 Gly Gln Arg Arg Gln Trp Glu Arg Ala Gln Ser Arg Arg Ala Phe
 35 40 45
 Gln Glu Leu Val Leu Glu Pro Ala Gln Arg Arg Ala Arg Leu Glu
 50 55 60
 Gly Leu Arg Tyr Thr Ala Val Leu Lys Gln Gln Ala Thr Gln His
 65 70 75
 Ser Met Ala Leu Leu His Trp Gly Ala Leu Trp Arg Gln Leu Ala
 80 85 90
 Ser Pro Cys Gly Ala Trp Ala Leu Arg Asp Thr Pro Ile Pro Arg
 95 100 105
 Trp Lys Leu Ser Ser Ala Glu Thr Tyr Ser Arg Met Arg Leu Lys
 110 115 120
 Leu Val Pro Asn His His Phe Asp Pro His Leu Glu Ala Ser Ala
 125 130 135
 Leu Arg Asp Asn Leu Gly Glu Val Pro Leu Thr Pro Thr Glu Glu
 140 145 150
 Ala Ser Leu Pro Leu Ala Val Thr Lys Glu Ala Lys Val Ser Thr
 155 160 165
 Pro Pro Glu Leu Leu Gln Glu Asp Gln Leu Gly Glu Asp Glu Leu
 170 175 180
 Ala Glu Leu Glu Thr Pro Met Glu Ala Ala Glu Leu Asp Glu Gln
 185 190 195
 Arg Glu Lys Leu Val Leu Ser Ala Glu Cys Gln Leu Val Thr Val
 200 205 210
 Val Ala Val Val Pro Gly Leu Leu Glu Val Thr Thr Gln Asn Val
 215 220 225
 Tyr Phe Tyr Asp Gly Ser Thr Glu Arg Val Glu Thr Glu Glu Gly
 230 235 240
 Ile Gly Tyr Asp Phe Arg Arg Pro Leu Ala Gln Leu Arg Glu Val
 245 250 255
 His Leu Arg Arg Phe Asn Leu Arg Arg Ser Ala Leu Glu Leu Phe
 260 265 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Ala | Leu | Thr | Val | Thr | Glu | Asp | Phe | Val | Leu | Leu | Gly | Thr | Ala | Gln |
| | | | | 905 | | | | | 910 | | | | | 915 |
| Cys | Ala | Leu | His | Ile | Leu | Gln | Leu | Asn | Thr | Leu | Leu | Pro | Ala | Ala |
| | | | | 920 | | | | | 925 | | | | | 930 |
| Pro | Pro | Leu | Pro | Met | Lys | Val | Ala | Ile | Arg | Ser | Val | Ala | Val | Thr |
| | | | | 935 | | | | | 940 | | | | | 945 |
| Lys | Glu | Arg | Ser | His | Val | Leu | Val | Gly | Leu | Glu | Asp | Gly | Lys | Leu |
| | | | | 950 | | | | | 955 | | | | | 960 |
| Ile | Val | Val | Val | Ala | Gly | Gln | Pro | Ser | Glu | Val | Arg | Ser | Ser | Gln |
| | | | | 965 | | | | | 970 | | | | | 975 |
| Phe | Ala | Arg | Lys | Leu | Trp | Arg | Ser | Ser | Arg | Arg | Ile | Ser | Gln | Val |
| | | | | 980 | | | | | 985 | | | | | 990 |
| Ser | Ser | Gly | Glu | Thr | Glu | Tyr | Asn | Pro | Thr | Glu | Ala | Arg | | |
| | | | | 995 | | | | | 1000 | | | | | |

<210> 34
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 34
 tgactgcact acccgtggc aagctgttga gccagctcag ctg 43

<210> 35
 <211> 1395
 <212> DNA
 <213> Homo sapiens

<400> 35
 cggacgcgtg ggcggacgcg tgggggctgt gagaaagtgc caataaatac 50
 atcatgcaac cccacggccc accttgtgaa ctctctgtgc ccagggctga 100
 tgtgctgtctt ccagggctac tcatccaaag gcctaatacca acgtttctgtc 150
 ttcaatctgc aaatctatgg ggtcctgggg ctcttctgga cccttaactg 200
 ggtactggcc ctgggccaat gcgtcctcgc tggagccttt gcctccttct 250
 actgggcctt ccacaagccc caggacatcc ctaccttccc cttaatctct 300
 gccttcatcc gcacactccg ttaccacact gggtcattgg catttggagc 350
 cctcatcctg acccttgtgc agatagcccc ggtcatcttg gagtatattg 400
 accacaagct cagaggagtg cagaaccctg tagcccgtg catcatgtgc 450
 tgtttcaagt gctgcctctg gtgtctggaa aaatttatca agttcctaaa 500
 ccgcaatgca tacatcatga tcgccatcta cgggaagaat ttctgtgtct 550
 cagccaaaaa tgcgttcatg ctactcatgc gaaacattgt cagggtggtc 600
 gtcttggaac aagtcacaga cctgctgctg ttctttggga agctgctggt 650

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Leu | Arg | Gly | Val | Gln | Asn | Pro | Val | Ala | Arg | Cys | Ile | Met | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Cys | Phe | Lys | Cys | Cys | Leu | Trp | Cys | Leu | Glu | Lys | Phe | Ile | Lys | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Asn | Arg | Asn | Ala | Tyr | Ile | Met | Ile | Ala | Ile | Tyr | Gly | Lys | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Phe | Cys | Val | Ser | Ala | Lys | Asn | Ala | Phe | Met | Leu | Leu | Met | Arg | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Val | Arg | Val | Val | Val | Leu | Asp | Lys | Val | Thr | Asp | Leu | Leu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Phe | Gly | Lys | Leu | Leu | Val | Val | Gly | Gly | Val | Gly | Val | Leu | Ser | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Phe | Phe | Phe | Phe | Ser | Gly | Arg | Ile | Pro | Gly | Leu | Gly | Lys | Asp | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Ser | Pro | His | Leu | Asn | Tyr | Tyr | Trp | Leu | Pro | Ile | Met | Thr | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Leu | Gly | Ala | Tyr | Val | Ile | Ala | Ser | Gly | Phe | Phe | Ser | Val | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Met | Cys | Val | Asp | Thr | Leu | Phe | Leu | Cys | Phe | Leu | Glu | Asp | Leu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Arg | Asn | Asn | Gly | Ser | Leu | Asp | Arg | Pro | Tyr | Tyr | Met | Ser | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Leu | Leu | Lys | Ile | Leu | Gly | Lys | Lys | Asn | Glu | Ala | Pro | Pro | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asn | Lys | Lys | Arg | Lys | Lys | | | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 37
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 37
 tcgtgccag ggcctgatgt gc 22

<210> 38
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 38
 gtctttaccc agccccggga tgcg 24

<210> 39
 <211> 50

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 39
ggcctaatacc aacgttctgt cttcaatctg caaatctatg gggtcctggg 50

<210> 40
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 40
gagtcttgac cgccgccggg ctcttggtac ctcagcgca ggcgcaggcg 50
tccggccgcc gtggctatgt tcgtgtccga tttccgcaa gagttctacg 100
agggtgtcca gagccagagg gtccttctct tcgtggcctc ggacgtggat 150
gctctgtgtg cgtgcaagat ccttcaggcc ttgttccagt gtgaccacgt 200
gcaatatacg ctggttccag tttctgggtg gcaagaactt gaaactgcat 250
ttcttgagca taaagaacag tttcattatt ttattctcat aaactgtgga 300
gctaattgtag acctattgga tattcttcaa cctgatgaag acactatatt 350
ctttgtgtgt gactccata ggccagtcaa tgtcgtcaat gtatacaacg 400
ataccagat caaattactc attaaacaag atgatgacct tgaagttccc 450
gcctatgaag acatcttcag ggatgaagag gaggatgaag agcattcagg 500
aaatgacagt gatgggtcag agccttctga gaagcgaca cggttagaag 550
aggagatagt ggagcaaacc atgcggagga ggcagcgcg agagtgggag 600
gcccggagaa gagacatcct ctttgactac gagcagtatg aatatcatgg 650
gacatcgtca gccatggtga tgtttgagct ggcttgatg ctgtccaagg 700
acctgaatga catgctgtgg tgggccatcg ttggactaac agaccagtgg 750
gtgcaagaca agatcactca aatgaaatac gtgactgatg ttggtgtcct 800
gcagcgccac gtttcccgcc acaaccaccg gaacgaggat gaggagaaca 850
cactctccgt ggactgcaca cggatctcct ttgagtatga cctccgctg 900
gtgctctacc agcactggtc cctccatgac agcctgtgca acaccagcta 950
taccgcagcc aggttcaagc tgtggtctgt gcatggacag aagcggctcc 1000
aggagtccct tgcagacatg ggtcttcccc tgaagcaggt gaagcagaag 1050
ttccaggcca tggacatctc cttgaaggag aatttgcggt aaatgattga 1100
agagtctgca aataaatttg ggatgaagga catgcgcgtg cagactttca 1150
gcattcattt tgggttcaag cacaagtttc tggccagcga cgtggtcttt 1200

| 245 | | | | | | | | | | 250 | | | | | 255 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Asn | Glu | Asp | Glu | Glu | Asn | Thr | Leu | Ser | Val | Asp | Cys | Thr | Arg | Ile | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ser | Phe | Glu | Tyr | Asp | Leu | Arg | Leu | Val | Leu | Tyr | Gln | His | Trp | Ser | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Leu | His | Asp | Ser | Leu | Cys | Asn | Thr | Ser | Tyr | Thr | Ala | Ala | Arg | Phe | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Lys | Leu | Trp | Ser | Val | His | Gly | Gln | Lys | Arg | Leu | Gln | Glu | Phe | Leu | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Ala | Asp | Met | Gly | Leu | Pro | Leu | Lys | Gln | Val | Lys | Gln | Lys | Phe | Gln | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Ala | Met | Asp | Ile | Ser | Leu | Lys | Glu | Asn | Leu | Arg | Glu | Met | Ile | Glu | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Glu | Ser | Ala | Asn | Lys | Phe | Gly | Met | Lys | Asp | Met | Arg | Val | Gln | Thr | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Phe | Ser | Ile | His | Phe | Gly | Phe | Lys | His | Lys | Phe | Leu | Ala | Ser | Asp | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Val | Val | Phe | Ala | Thr | Met | Ser | Leu | Met | Glu | Ser | Pro | Glu | Lys | Asp | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Gly | Ser | Gly | Thr | Asp | His | Phe | Ile | Gln | Ala | Leu | Asp | Ser | Leu | Ser | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Arg | Ser | Asn | Leu | Asp | Lys | Leu | Tyr | His | Gly | Leu | Glu | Leu | Ala | Lys | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Lys | Gln | Leu | Arg | Ala | Thr | Gln | Gln | Thr | Ile | Ala | Ser | Cys | Leu | Cys | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Thr | Asn | Leu | Val | Ile | Ser | Gln | Gly | Pro | Phe | Leu | Tyr | Cys | Ser | Leu | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Met | Glu | Gly | Thr | Pro | Asp | Val | Met | Leu | Phe | Ser | Arg | Pro | Ala | Ser | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Leu | Ser | Leu | Leu | Ser | Lys | His | Leu | Leu | Lys | Ser | Phe | Val | Cys | Ser | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Thr | Lys | Asn | Arg | Arg | Cys | Lys | Leu | Leu | Pro | Leu | Val | Met | Ala | Ala | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Pro | Leu | Ser | Met | Glu | His | Gly | Thr | Val | Thr | Val | Val | Gly | Ile | Pro | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Pro | Glu | Thr | Asp | Ser | Ser | Asp | Arg | Lys | Asn | Phe | Phe | Gly | Arg | Ala | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Phe | Glu | Lys | Ala | Ala | Glu | Ser | Thr | Ser | Ser | Arg | Met | Leu | His | Asn | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| His | Phe | Asp | Leu | Ser | Val | Ile | Glu | Leu | Lys | Ala | Glu | Asp | Arg | Ser | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| Lys | Phe | Leu | Asp | Ala | Leu | Ile | Ser | Leu | Leu | Ser | | | | | | | | | |

<210> 42
 <211> 380
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 44, 118, 172, 183
 <223> unknown base

<400> 42
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 ccgatttccg caaagagttc tacgaggtgg tccagagcca gagggtoctt 100
 ctcttcgtgg cctcggangt ggatgctctg tgtgcgtgca agatccttca 150
 ggccttggtc cagtgtgacc angtgcaata tangctggtt ccagtttctg 200
 ggtggcaaga acttgaaact gcatttcttg agcataaaga acagtttcat 250
 tattttatct tcataaactg tggagctaag gtagacctat tggatattct 300
 tcaacctgat gaagacacta tattctttgt gtgtgacacc cataggccag 350
 tcaatgttgt caatgtatac aacgataccc 380

<210> 43
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 43
 ttccgcaaag agttctacga ggtgg 25

<210> 44
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 44
 attgacaaca ttgactggcc tatggg 26

<210> 45
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 45
 gtggatgctc tgtgtgcgtg caagatcctt caggccttgt tccagtgtga 50

<210> 46

<211> 3089
<212> DNA
<213> Homo sapiens

<400> 46
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<210> 47
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<212> PRT
<213> Homo sapiens

<220>
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<222> 1-20
<223> Signal Peptide

<220>
<221> N-glycosylation Site
<222> 72-75
<223> N-glycosylation Site

<220>
<221> Clq Domain Proteins
<222> 144-178, 78-111, 84-117
<223> Clq Domain Proteins

<400> 47
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20 25 30
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35 40 45
Pro Leu Asp Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg
50 55 60
Pro His Ala Leu Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile
65 70 75
Leu Lys Gly Asp Lys Gly Asp Pro Gly Pro Met Gly Leu Pro Gly
80 85 90
Tyr Met Gly Arg Glu Gly Pro Gln Gly Glu Pro Gly Pro Gln Gly
95 100 105
Ser Lys Gly Asp Lys Gly Glu Met Gly Ser Pro Gly Ala Pro Cys
110 115 120
Gln Lys Arg Phe Phe Ala Phe Ser Val Gly Arg Lys Thr Ala Leu
125 130 135
His Ser Gly Glu Asp Phe Gln Thr Leu Leu Phe Glu Arg Val Phe
140 145 150
Val Asn Leu Asp Gly Cys Phe Asp Met Ala Thr Gly Gln Phe Ala
155 160 165
Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu Asn Val His Ser
170 175 180
Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His Asn Gln Lys
185 190 195
Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser Ile Met

| | | | |
|-----------------|---------------------|---------------------|-----|
| | 200 | 205 | 210 |
| Gln Ser Gln Ser | Val Met Leu Asp Leu | Ala Tyr Gly Asp Arg | Val |
| | 215 | 220 | 225 |
| Trp Val Arg Leu | Phe Lys Arg Gln Arg | Glu Asn Ala Ile Tyr | Ser |
| | 230 | 235 | 240 |
| Asn Asp Phe Asp | Thr Tyr Ile Thr Phe | Ser Gly His Leu Ile | Lys |
| | 245 | 250 | 255 |
| Ala Glu Asp Asp | | | |

<210> 48
 <211> 25
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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 48
 ccagacgctg ctcttcgaaa gggtc 25

<210> 49
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 49
 ggtcccgta ggccaggtcc agc 23

<210> 50
 <211> 50
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 50
 ctacttcttc agcctcaatg tgcacagctg gaattacaag gagacgtacg 50

<210> 51
 <211> 2768
 <212> DNA
 <213> Homo sapiens

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 ccgcctcccg ggacagaaga tgtgctccag ggtccctctg ctgctgccgc 150
 tgctcctgct actggccctg gggcctgggg tgcagggctg cccatccggc 200
 tgccagtgca gccagccaca gacagtcttc tgcactgcc gccaggggac 250

| | 95 | 100 | 105 |
|-----------------|---------------------|---------------------|-----|
| Asp Leu Thr Ala | Asn Arg Leu His Glu | Ile Thr Asn Glu Thr | Phe |
| | 110 | 115 | 120 |
| Arg Gly Leu Arg | Arg Leu Glu Arg Leu | Tyr Leu Gly Lys Asn | Arg |
| | 125 | 130 | 135 |
| Ile Arg His Ile | Gln Pro Gly Ala Phe | Asp Thr Leu Asp Arg | Leu |
| | 140 | 145 | 150 |
| Leu Glu Leu Lys | Leu Gln Asp Asn Glu | Leu Arg Ala Leu Pro | Pro |
| | 155 | 160 | 165 |
| Leu Arg Leu Pro | Arg Leu Leu Leu Leu | Asp Leu Ser His Asn | Ser |
| | 170 | 175 | 180 |
| Leu Leu Ala Leu | Glu Pro Gly Ile Leu | Asp Thr Ala Asn Val | Glu |
| | 185 | 190 | 195 |
| Ala Leu Arg Leu | Ala Gly Leu Gly Leu | Gln Gln Leu Asp Glu | Gly |
| | 200 | 205 | 210 |
| Leu Phe Ser Arg | Leu Arg Asn Leu His | Asp Leu Asp Val Ser | Asp |
| | 215 | 220 | 225 |
| Asn Gln Leu Glu | Arg Val Pro Pro Val | Ile Arg Gly Leu Arg | Gly |
| | 230 | 235 | 240 |
| Leu Thr Arg Leu | Arg Leu Ala Gly Asn | Thr Arg Ile Ala Gln | Leu |
| | 245 | 250 | 255 |
| Arg Pro Glu Asp | Leu Ala Gly Leu Ala | Ala Leu Gln Glu Leu | Asp |
| | 260 | 265 | 270 |
| Val Ser Asn Leu | Ser Leu Gln Ala Leu | Pro Gly Asp Leu Ser | Gly |
| | 275 | 280 | 285 |
| Leu Phe Pro Arg | Leu Arg Leu Leu Ala | Ala Ala Arg Asn Pro | Phe |
| | 290 | 295 | 300 |
| Asn Cys Val Cys | Pro Leu Ser Trp Phe | Gly Pro Trp Val Arg | Glu |
| | 305 | 310 | 315 |
| Ser His Val Thr | Leu Ala Ser Pro Glu | Glu Thr Arg Cys His | Phe |
| | 320 | 325 | 330 |
| Pro Pro Lys Asn | Ala Gly Arg Leu Leu | Leu Glu Leu Asp Tyr | Ala |
| | 335 | 340 | 345 |
| Asp Phe Gly Cys | Pro Ala Thr Thr Thr | Thr Ala Thr Val Pro | Thr |
| | 350 | 355 | 360 |
| Thr Arg Pro Val | Val Arg Glu Pro Thr | Ala Leu Ser Ser Ser | Leu |
| | 365 | 370 | 375 |
| Ala Pro Thr Trp | Leu Ser Pro Thr Ala | Pro Ala Thr Glu Ala | Pro |
| | 380 | 385 | 390 |
| Ser Pro Pro Ser | Thr Ala Pro Pro Thr | Val Gly Pro Val Pro | Gln |
| | 395 | 400 | 405 |
| Pro Gln Asp Cys | Pro Pro Ser Thr Cys | Leu Asn Gly Gly Thr | Cys |

<210> 54
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 54
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<210> 55
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 55
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<210> 56
<211> 3462
<212> DNA
<213> Homo sapiens

<400> 56
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ttatgacagc agaggggtgat gctccagagc tgccagaaga aagggaactg 200
atgaccaact gctccaacat gtctctaaga aagggtcccg cagacttgac 250
cccagccaca acgacactgg atttatccta taacctcctt tttcaactcc 300
agagttcaga ttttcattct gtctccaaac tgagagtgtt gattctatgc 350
cataacagaa ttcaacagct ggatctcaaa acctttgaat tcaacaagga 400
gttaagatat ttagatttgt ctaataacag actgaagagt gtaacttggg 450
atttactggc aggtctcagg tattttagatc tttcttttaa tgactttgac 500
accatgccta tctgtgagga agctggcaac atgtcacacc tggaaatcct 550
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gaagaaggta gcctgcccac cttaaacaca acaaaactgc acattgtttt 700
accaatggac acaaatttct gggttctttt gcgtgatgga atcaagactt 750
caaaaatatt agaaatgaca aatatagatg gcaaaagcca atttgtaagt 800
tatgaaatgc aacgaaatct tagtttagaa aatgctaaga catcggttct 850
attgcttaat aaagttgatt tactctggga cgaccttttc cttatcttac 900

gtctcgaggt tctacaatct ctctgatgag aacagattgt ctataaaatc 2550
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aatataatat tacatgccac taaaaagaat aaggtagctg tatatttcct 3200
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<210> 57
<211> 811
<212> PRT
<213> Homo sapiens

<400> 57
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1 5 10 15
Thr Ala Glu Gly Asp Ala Pro Glu Leu Pro Glu Glu Arg Glu Leu
20 25 30
Met Thr Asn Cys Ser Asn Met Ser Leu Arg Lys Val Pro Ala Asp
35 40 45
Leu Thr Pro Ala Thr Thr Thr Leu Asp Leu Ser Tyr Asn Leu Leu
50 55 60
Phe Gln Leu Gln Ser Ser Asp Phe His Ser Val Ser Lys Leu Arg
65 70 75
Val Leu Ile Leu Cys His Asn Arg Ile Gln Gln Leu Asp Leu Lys
80 85 90

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Phe | Glu | Phe | Asn | Lys | Glu | Leu | Arg | Tyr | Leu | Asp | Leu | Ser | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asn | Arg | Leu | Lys | Ser | Val | Thr | Trp | Tyr | Leu | Leu | Ala | Gly | Leu | Arg | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Tyr | Leu | Asp | Leu | Ser | Phe | Asn | Asp | Phe | Asp | Thr | Met | Pro | Ile | Cys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Glu | Glu | Ala | Gly | Asn | Met | Ser | His | Leu | Glu | Ile | Leu | Gly | Leu | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Ala | Lys | Ile | Gln | Lys | Ser | Asp | Phe | Gln | Lys | Ile | Ala | His | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| His | Leu | Asn | Thr | Val | Phe | Leu | Gly | Phe | Arg | Thr | Leu | Pro | His | Tyr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Glu | Glu | Gly | Ser | Leu | Pro | Ile | Leu | Asn | Thr | Thr | Lys | Leu | His | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Val | Leu | Pro | Met | Asp | Thr | Asn | Phe | Trp | Val | Leu | Leu | Arg | Asp | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ile | Lys | Thr | Ser | Lys | Ile | Leu | Glu | Met | Thr | Asn | Ile | Asp | Gly | Lys | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Gln | Phe | Val | Ser | Tyr | Glu | Met | Gln | Arg | Asn | Leu | Ser | Leu | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asn | Ala | Lys | Thr | Ser | Val | Leu | Leu | Leu | Asn | Lys | Val | Asp | Leu | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Trp | Asp | Asp | Leu | Phe | Leu | Ile | Leu | Gln | Phe | Val | Trp | His | Thr | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Val | Glu | His | Phe | Gln | Ile | Arg | Asn | Val | Thr | Phe | Gly | Gly | Lys | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Tyr | Leu | Asp | His | Asn | Ser | Phe | Asp | Tyr | Ser | Asn | Thr | Val | Met | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Thr | Ile | Lys | Leu | Glu | His | Val | His | Phe | Arg | Val | Phe | Tyr | Ile | Gln | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gln | Asp | Lys | Ile | Tyr | Leu | Leu | Leu | Thr | Lys | Met | Asp | Ile | Glu | Asn | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Leu | Thr | Ile | Ser | Asn | Ala | Gln | Met | Pro | His | Met | Leu | Phe | Pro | Asn | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Tyr | Pro | Thr | Lys | Phe | Gln | Tyr | Leu | Asn | Phe | Ala | Asn | Asn | Ile | Leu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Thr | Asp | Glu | Leu | Phe | Lys | Arg | Thr | Ile | Gln | Leu | Pro | His | Leu | Lys | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Thr | Leu | Ile | Leu | Asn | Gly | Asn | Lys | Leu | Glu | Thr | Leu | Ser | Leu | Val | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ser | Cys | Phe | Ala | Asn | Asn | Thr | Pro | Leu | Glu | His | Leu | Asp | Leu | Ser | |
| | | | | 395 | | | | | 400 | | | | | 405 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Asp | His | Ile | Ile | Leu | Ile | Leu | Leu | Glu | Pro | Ile | Pro | Phe |
| | | | | 725 | | | | | | 730 | | | | 735 |
| Tyr | Cys | Ile | Pro | Thr | Arg | Tyr | His | Lys | Leu | Lys | Ala | Leu | Leu | Glu |
| | | | | 740 | | | | | | 745 | | | | 750 |
| Lys | Lys | Ala | Tyr | Leu | Glu | Trp | Pro | Lys | Asp | Arg | Arg | Lys | Cys | Gly |
| | | | | 755 | | | | | | 760 | | | | 765 |
| Leu | Phe | Trp | Ala | Asn | Leu | Arg | Ala | Ala | Ile | Asn | Val | Asn | Val | Leu |
| | | | | 770 | | | | | | 775 | | | | 780 |
| Ala | Thr | Arg | Glu | Met | Tyr | Glu | Leu | Gln | Thr | Phe | Thr | Glu | Leu | Asn |
| | | | | 785 | | | | | | 790 | | | | 795 |
| Glu | Glu | Ser | Arg | Gly | Ser | Thr | Ile | Ser | Leu | Met | Arg | Thr | Asp | Cys |
| | | | | 800 | | | | | | 805 | | | | 810 |

Leu

<210> 58
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 58
 tcccaccagg tatcataaac tgaa 24

<210> 59
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 59
 ttatagacaa tctgtttctca tcagaga 27

<210> 60
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 60
 aaaaagcata cttggaatgg cccaaggata ggtgtaaatg 40

<210> 61
 <211> 3772
 <212> DNA
 <213> Homo sapiens

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 cctcgagggg gtcgccggga aaggaggga agaaggaagg gcggggccgg 100

cccccctgcg cccgccccgc gcctctgcgc gccctgtcc gccccggccc 150
 agcccagccc agccccgcgg gccggtcaca cgcgagcca gccggccgcc 200
 tcccgcgccc aagcgcgccg ctctgctgtg ccctgcgccc ttgccccgcg 250
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 gccctggggc cggggcgag caggcatgtc ccgcccggg accgctaccc 350
 cagcgctggc cctggtgctc ctggcagtga ccctggccgg ggtcggagcc 400
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 aaccttaaaa atcacagact tccagctcca tgcctccacg gtgaagcgct 800
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<220>
<223> Synthetic oligonucleotide probe

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<211> 2854
<212> DNA
<213> Homo sapiens
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67

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 gaatattgcc agagttaacc tgaccaccaa cacgattgct gtgactcaaa 1100
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<211> 510
<212> PRT
<213> Homo sapiens

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Ser Pro Gly Phe Ser Ser Phe Pro Gly Val Asp Ser Ser Ser Ser
35 40 45
Phe Ser Ser Ser Ser Arg Ser Gly Ser Ser Ser Ser Arg Ser Leu
50 55 60
Gly Ser Gly Gly Ser Val Ser Gln Leu Phe Ser Asn Phe Thr Gly
65 70 75
Ser Val Asp Asp Arg Gly Thr Cys Gln Cys Ser Val Ser Leu Pro
80 85 90
Asp Thr Thr Phe Pro Val Asp Arg Val Glu Arg Leu Glu Phe Thr
95 100 105
Ala His Val Leu Ser Gln Lys Phe Glu Lys Glu Leu Ser Lys Val
110 115 120
Arg Glu Tyr Val Gln Leu Ile Ser Val Tyr Glu Lys Lys Leu Leu
125 130 135
Asn Leu Thr Val Arg Ile Asp Ile Met Glu Lys Asp Thr Ile Ser
140 145 150
Tyr Thr Glu Leu Asp Phe Glu Leu Ile Lys Val Glu Val Lys Glu
155 160 165
Met Glu Lys Leu Val Ile Gln Leu Lys Glu Ser Phe Gly Gly Ser
170 175 180
Ser Glu Ile Val Asp Gln Leu Glu Val Glu Ile Arg Asn Met Thr
185 190 195
Leu Leu Val Glu Lys Leu Glu Thr Leu Asp Lys Asn Asn Val Leu
200 205 210

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Arg | Arg | Glu | Ile | Val | Ala | Leu | Lys | Thr | Lys | Leu | Lys | Glu | 215 | 220 | 225 |
| Cys | Glu | Ala | Ser | Lys | Asp | Gln | Asn | Thr | Pro | Val | Val | His | Pro | Pro | 230 | 235 | 240 |
| Pro | Thr | Pro | Gly | Ser | Cys | Gly | His | Gly | Gly | Val | Val | Asn | Ile | Ser | 245 | 250 | 255 |
| Lys | Pro | Ser | Val | Val | Gln | Leu | Asn | Trp | Arg | Gly | Phe | Ser | Tyr | Leu | 260 | 265 | 270 |
| Tyr | Gly | Ala | Trp | Gly | Arg | Asp | Tyr | Ser | Pro | Gln | His | Pro | Asn | Lys | 275 | 280 | 285 |
| Gly | Leu | Tyr | Trp | Val | Ala | Pro | Leu | Asn | Thr | Asp | Gly | Arg | Leu | Leu | 290 | 295 | 300 |
| Glu | Tyr | Tyr | Arg | Leu | Tyr | Asn | Thr | Leu | Asp | Asp | Leu | Leu | Leu | Tyr | 305 | 310 | 315 |
| Ile | Asn | Ala | Arg | Glu | Leu | Arg | Ile | Thr | Tyr | Gly | Gln | Gly | Ser | Gly | 320 | 325 | 330 |
| Thr | Ala | Val | Tyr | Asn | Asn | Asn | Met | Tyr | Val | Asn | Met | Tyr | Asn | Thr | 335 | 340 | 345 |
| Gly | Asn | Ile | Ala | Arg | Val | Asn | Leu | Thr | Thr | Asn | Thr | Ile | Ala | Val | 350 | 355 | 360 |
| Thr | Gln | Thr | Leu | Pro | Asn | Ala | Ala | Tyr | Asn | Asn | Arg | Phe | Ser | Tyr | 365 | 370 | 375 |
| Ala | Asn | Val | Ala | Trp | Gln | Asp | Ile | Asp | Phe | Ala | Val | Asp | Glu | Asn | 380 | 385 | 390 |
| Gly | Leu | Trp | Val | Ile | Tyr | Ser | Thr | Glu | Ala | Ser | Thr | Gly | Asn | Met | 395 | 400 | 405 |
| Val | Ile | Ser | Lys | Leu | Asn | Asp | Thr | Thr | Leu | Gln | Val | Leu | Asn | Thr | 410 | 415 | 420 |
| Trp | Tyr | Thr | Lys | Gln | Tyr | Lys | Pro | Ser | Ala | Ser | Asn | Ala | Phe | Met | 425 | 430 | 435 |
| Val | Cys | Gly | Val | Leu | Tyr | Ala | Thr | Arg | Thr | Met | Asn | Thr | Arg | Thr | 440 | 445 | 450 |
| Glu | Glu | Ile | Phe | Tyr | Tyr | Tyr | Asp | Thr | Asn | Thr | Gly | Lys | Glu | Gly | 455 | 460 | 465 |
| Lys | Leu | Asp | Ile | Val | Met | His | Lys | Met | Gln | Glu | Lys | Val | Gln | Ser | 470 | 475 | 480 |
| Ile | Asn | Tyr | Asn | Pro | Phe | Asp | Gln | Lys | Leu | Tyr | Val | Tyr | Asn | Asp | 485 | 490 | 495 |
| Gly | Tyr | Leu | Leu | Asn | Tyr | Asp | Leu | Ser | Val | Leu | Gln | Lys | Pro | Gln | 500 | 505 | 510 |

<210> 68
 <211> 410
 <212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 206, 217, 387

<223> unknown base

<400> 68

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ctcgagagtt gcggatcacc tatggccaag gtagtggtac agcagtttac 350
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<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 69

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<210> 70

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

ctaccttggc cataggtgat ccgc 24

<210> 71

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 71

catcagcaaa ccgtctgtgg ttcagctcaa ctggagaggg tt 42

<210> 72

<211> 3127

<212> DNA

<213> Homo sapiens

<400> 72

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tggggctgtg ctccatggcg agctggatac catgtttgtg tggaagtgcc 150
ccgtgtttgc tatgccgatg ctgtcctagt ggaaacaact ccaactgtaac 200
tagattgatc tatgcacttt tcttgcttgt tggagtatgt gtagcttgtg 250
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<210> 73
 <211> 453
 <212> PRT
 <213> Homo sapiens

<400> 73

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| Met | Gly | Ser | Val | Leu | Gly | Leu | Cys | Ser | Met | Ala | Ser | Trp | Ile | Pro | 1 | 5 | 10 | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Leu | Leu | Cys | Arg | Cys | Cys | Pro | 20 | 25 | 30 | |
| Ser | Gly | Asn | Asn | Ser | Thr | Val | Thr | Arg | Leu | Ile | Tyr | Ala | Leu | Phe | 35 | 40 | 45 | |
| Leu | Leu | Val | Gly | Val | Cys | Val | Ala | Cys | Val | Met | Leu | Ile | Pro | Gly | 50 | 55 | 60 | |
| Met | Glu | Glu | Gln | Leu | Asn | Lys | Ile | Pro | Gly | Phe | Cys | Glu | Asn | Glu | 65 | 70 | 75 | |
| Lys | Gly | Val | Val | Pro | Cys | Asn | Ile | Leu | Val | Gly | Tyr | Lys | Ala | Val | 80 | 85 | 90 | |
| Tyr | Arg | Leu | Cys | Phe | Gly | Leu | Ala | Met | Phe | Tyr | Leu | Leu | Leu | Ser | 95 | 100 | 105 | |
| Leu | Leu | Met | Ile | Lys | Val | Lys | Ser | Ser | Ser | Asp | Pro | Arg | Ala | Ala | 110 | 115 | 120 | |
| Val | His | Asn | Gly | Phe | Trp | Phe | Phe | Lys | Phe | Ala | Ala | Ala | Ile | Ala | 125 | 130 | 135 | |
| Ile | Ile | Ile | Gly | Ala | Phe | Phe | Ile | Pro | Glu | Gly | Thr | Phe | Thr | Thr | 140 | 145 | 150 | |
| Val | Trp | Phe | Tyr | Val | Gly | Met | Ala | Gly | Ala | Phe | Cys | Phe | Ile | Leu | 155 | 160 | 165 | |
| Ile | Gln | Leu | Val | Leu | Leu | Ile | Asp | Phe | Ala | His | Ser | Trp | Asn | Glu | 170 | 175 | 180 | |
| Ser | Trp | Val | Glu | Lys | Met | Glu | Glu | Gly | Asn | Ser | Arg | Cys | Trp | Tyr | 185 | 190 | 195 | |
| Ala | Ala | Leu | Leu | Ser | Ala | Thr | Ala | Leu | Asn | Tyr | Leu | Leu | Ser | Leu | 200 | 205 | 210 | |
| Val | Ala | Ile | Val | Leu | Phe | Phe | Val | Tyr | Tyr | Thr | His | Pro | Ala | Ser | 215 | 220 | 225 | |
| Cys | Ser | Glu | Asn | Lys | Ala | Phe | Ile | Ser | Val | Asn | Met | Leu | Leu | Cys | 230 | 235 | 240 | |
| Val | Gly | Ala | Ser | Val | Met | Ser | Ile | Leu | Pro | Lys | Ile | Gln | Glu | Ser | 245 | 250 | 255 | |
| Gln | Pro | Arg | Ser | Gly | Leu | Leu | Gln | Ser | Ser | Val | Ile | Thr | Val | Tyr | 260 | 265 | 270 | |
| Thr | Met | Tyr | Leu | Thr | Trp | Ser | Ala | Met | Thr | Asn | Glu | Pro | Glu | Thr | 275 | 280 | 285 | |

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tgctgcagca attgcaatta ttattggggc 480

<210> 75
<211> 438
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 32, 65, 92, 121, 142, 154, 170, 293, 315, 323
<223> unknown base

<400> 75
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tttnttgctt gttggagtan gtgtagcttg tgtaatgttg ataccaggaa 200
tggaagaaca actgaataag attcctggat tttgtgagaa tgagaaaggt 250
gttgtccctt gtaacatttt ggttggctat aaagctgtat atngtttgtg 300
ctttggtttg gctangttct atnttcttct ctctttacta atgatcaaag 350
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tttaaatttg ctgcagcaat tgcaattatt attggggc 438

<210> 76
<211> 473
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 48
<223> unknown base

<400> 76
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gtttgtgttg aagtgccccg tgtttgctat gccgatgctg tcctagtggg 150
aacaactcca ctgtaactag attgatctat gcacttttct tgcttggttg 200
agtatgtgta gcttgtgtaa tgttgatacc aggaatggaa gaacaactga 250
ataagattcc tggattttgt gagaatgaga aagggtgttg cccttgtaac 300
attttggttg gctataaagc tgtatatcgt ttgtgctttg gtttggctat 350
gttctatctt cttctctctt tactaatgat caaagtgaag agtagcagt 400
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<210> 77
<211> 666
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 21, 111
<223> unknown base

<400> 77
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caggattgga ngaacaactg aataagattc ctggattttt gtgagaatga 150
gaaagggtgtt gtccccttgt aacatttttg gttggctata aagctgtata 200
tcgtttgtgc tttggtttg ctatgttcta tctttctctc tctttactaa 250
tgatcaaagt gaagagtagc agtgatccta gagctgcagt gcacaatgga 300
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gagatgttgg tatgcagcct tggtatcagc tacagctctg aattatctgc 550
tgtctttagt tgctatcgtc ctgttctttg tctactacac tcatccagcc 600
agttgttcag aaaacaaggc gttcatcagt gtcaacatgc tcctctgcgt 650
tggtgcttct gtaatg 666

<210> 78
<211> 22
<212> DNA
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gagcatgccca ccactggact gac 23

<210> 82
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<220>
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gcac 54

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<212> DNA
<213> Homo sapiens

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tttacatgta atcaacatgg gaacttttag gggaaacctaa taagaaatcc 3850
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 <212> PRT
 <213> Homo sapiens

<400> 84
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 35 40 45
 Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser
 50 55 60
 Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly
 65 70 75
 Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro
 80 85 90
 Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn
 95 100 105
 Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala
 110 115 120
 Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
 125 130 135
 Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
 140 145 150
 Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Leu Lys
 155 160 165
 Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys
 170 175 180
 Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu
 185 190 195
 Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met
 200 205 210
 Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala Pro
 215 220 225
 His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro
 230 235 240
 Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn
 245 250 255

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Asp | Lys | His | Trp | Ile | Met | Arg | Tyr | Thr | Gly | Pro | Met | Lys | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ile | His | Met | Glu | Phe | Thr | Asn | Met | Leu | Gln | Arg | Lys | Arg | Leu | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Leu | Met | Ser | Val | Asp | Asp | Ser | Met | Glu | Thr | Ile | Tyr | Asn | Met | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Val | Glu | Thr | Gly | Glu | Leu | Asp | Asn | Thr | Tyr | Ile | Val | Tyr | Thr | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ala | Asp | His | Gly | Tyr | His | Ile | Gly | Gln | Phe | Gly | Leu | Val | Lys | Gly | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Lys | Ser | Met | Pro | Tyr | Glu | Phe | Asp | Ile | Arg | Val | Pro | Phe | Tyr | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Arg | Gly | Pro | Asn | Val | Glu | Ala | Gly | Cys | Leu | Asn | Pro | His | Ile | Val | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Leu | Asn | Ile | Asp | Leu | Ala | Pro | Thr | Ile | Leu | Asp | Ile | Ala | Gly | Leu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Asp | Ile | Pro | Ala | Asp | Met | Asp | Gly | Lys | Ser | Ile | Leu | Lys | Leu | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Asp | Thr | Glu | Arg | Pro | Val | Asn | Arg | Phe | His | Leu | Lys | Lys | Lys | Met | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Arg | Val | Trp | Arg | Asp | Ser | Phe | Leu | Val | Glu | Arg | Gly | Lys | Leu | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| His | Lys | Arg | Asp | Asn | Asp | Lys | Val | Asp | Ala | Gln | Glu | Glu | Asn | Phe | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Leu | Pro | Lys | Tyr | Gln | Arg | Val | Lys | Asp | Leu | Cys | Gln | Arg | Ala | Glu | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Tyr | Gln | Thr | Ala | Cys | Glu | Gln | Leu | Gly | Gln | Lys | Trp | Gln | Cys | Val | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Glu | Asp | Ala | Thr | Gly | Lys | Leu | Lys | Leu | His | Lys | Cys | Lys | Gly | Pro | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Met | Arg | Leu | Gly | Gly | Ser | Arg | Ala | Leu | Ser | Asn | Leu | Val | Pro | Lys | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Tyr | Tyr | Gly | Gln | Gly | Ser | Glu | Ala | Cys | Thr | Cys | Asp | Ser | Gly | Asp | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Tyr | Lys | Leu | Ser | Leu | Ala | Gly | Arg | Arg | Lys | Lys | Leu | Phe | Lys | Lys | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Lys | Tyr | Lys | Ala | Ser | Tyr | Val | Arg | Ser | Arg | Ser | Ile | Arg | Ser | Val | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Ala | Ile | Glu | Val | Asp | Gly | Arg | Val | Tyr | His | Val | Gly | Leu | Gly | Asp | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Ala | Ala | Gln | Pro | Arg | Asn | Leu | Thr | Lys | Arg | His | Trp | Pro | Gly | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Asp | Gln | Asp | Asp | Lys | Asp | Gly | Gly | Asp | Phe | Ser | Gly | Thr | 575 | 580 | 585 |
| Gly | Gly | Leu | Pro | Asp | Tyr | Ser | Ala | Ala | Asn | Pro | Ile | Lys | Val | Thr | 590 | 595 | 600 |
| His | Arg | Cys | Tyr | Ile | Leu | Glu | Asn | Asp | Thr | Val | Gln | Cys | Asp | Leu | 605 | 610 | 615 |
| Asp | Leu | Tyr | Lys | Ser | Leu | Gln | Ala | Trp | Lys | Asp | His | Lys | Leu | His | 620 | 625 | 630 |
| Ile | Asp | His | Glu | Ile | Glu | Thr | Leu | Gln | Asn | Lys | Ile | Lys | Asn | Leu | 635 | 640 | 645 |
| Arg | Glu | Val | Arg | Gly | His | Leu | Lys | Lys | Lys | Arg | Pro | Glu | Glu | Cys | 650 | 655 | 660 |
| Asp | Cys | His | Lys | Ile | Ser | Tyr | His | Thr | Gln | His | Lys | Gly | Arg | Leu | 665 | 670 | 675 |
| Lys | His | Arg | Gly | Ser | Ser | Leu | His | Pro | Phe | Arg | Lys | Gly | Leu | Gln | 680 | 685 | 690 |
| Glu | Lys | Asp | Lys | Val | Trp | Leu | Leu | Arg | Glu | Gln | Lys | Arg | Lys | Lys | 695 | 700 | 705 |
| Lys | Leu | Arg | Lys | Leu | Leu | Lys | Arg | Leu | Gln | Asn | Asn | Asp | Thr | Cys | 710 | 715 | 720 |
| Ser | Met | Pro | Gly | Leu | Thr | Cys | Phe | Thr | His | Asp | Asn | Gln | His | Trp | 725 | 730 | 735 |
| Gln | Thr | Ala | Pro | Phe | Trp | Thr | Leu | Gly | Pro | Phe | Cys | Ala | Cys | Thr | 740 | 745 | 750 |
| Ser | Ala | Asn | Asn | Asn | Thr | Tyr | Trp | Cys | Met | Arg | Thr | Ile | Asn | Glu | 755 | 760 | 765 |
| Thr | His | Asn | Phe | Leu | Phe | Cys | Glu | Phe | Ala | Thr | Gly | Phe | Leu | Glu | 770 | 775 | 780 |
| Tyr | Phe | Asp | Leu | Asn | Thr | Asp | Pro | Tyr | Gln | Leu | Met | Asn | Ala | Val | 785 | 790 | 795 |
| Asn | Thr | Leu | Asp | Arg | Asp | Val | Leu | Asn | Gln | Leu | His | Val | Gln | Leu | 800 | 805 | 810 |
| Met | Glu | Leu | Arg | Ser | Cys | Lys | Gly | Tyr | Lys | Gln | Cys | Asn | Pro | Arg | 815 | 820 | 825 |
| Thr | Arg | Asn | Met | Asp | Leu | Asp | Gly | Gly | Ser | Tyr | Glu | Gln | Tyr | Arg | 830 | 835 | 840 |
| Gln | Phe | Gln | Arg | Arg | Lys | Trp | Pro | Glu | Met | Lys | Arg | Pro | Ser | Ser | 845 | 850 | 855 |
| Lys | Ser | Leu | Gly | Gln | Leu | Trp | Glu | Gly | Trp | Glu | Gly | | | | 860 | 865 | |

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 <212> DNA

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 <210> 86
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 86
 ggccagctat ctccgcag 18
 <210> 87
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 87
 aagggcctgc aagagaag 18
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 <211> 18
 <212> DNA
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 <223> Synthetic oligonucleotide probe
 <400> 88
 cactgggaca actgtggg 18
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 cagaggcaac gtggagag 18
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 <211> 21
 <212> DNA
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<210> 91
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<400> 91
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<210> 92
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 92
tcataccaac tgctggtcat tggc 24

<210> 93
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
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<400> 93
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<210> 94
<211> 971
<212> DNA
<213> Homo sapiens

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 cccagggctg ccgcccctgt tgtgtctttt ttcagactc acagtggagc 1250
 ttccaggacc cagaataaag ccaatgattt acttgtttca cctggaaaaa 1300
 aaaaaaaaaa aa 1312

<210> 97
 <211> 313
 <212> PRT
 <213> Homo sapiens

<400> 97
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 Leu Ala Gly Val Glu Val Ser Ala Gly Ser Pro Pro Ile Arg Asn
 35 40 45
 Val Thr Val Ala Tyr Lys Phe His Met Gly Leu Tyr Gly Glu Thr
 50 55 60
 Gly Arg Leu Phe Thr Glu Ser Cys Ser Ile Ser Pro Lys Leu Arg
 65 70 75

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ile | Ala | Val | Tyr | Tyr | Asp | Asn | Pro | His | Met | Val | Pro | Pro | Asp | 80 | 85 | 90 |
| Lys | Cys | Arg | Cys | Ala | Val | Gly | Ser | Ile | Leu | Ser | Glu | Gly | Glu | Glu | 95 | 100 | 105 |
| Ser | Pro | Ser | Pro | Glu | Leu | Ile | Asp | Leu | Tyr | Gln | Lys | Phe | Gly | Phe | 110 | 115 | 120 |
| Lys | Val | Phe | Ser | Phe | Pro | Ala | Pro | Ser | His | Val | Val | Thr | Ala | Thr | 125 | 130 | 135 |
| Phe | Pro | Tyr | Thr | Thr | Ile | Leu | Ser | Ile | Trp | Leu | Ala | Thr | Arg | Arg | 140 | 145 | 150 |
| Val | His | Pro | Ala | Leu | Asp | Thr | Tyr | Ile | Lys | Glu | Arg | Lys | Leu | Cys | 155 | 160 | 165 |
| Ala | Tyr | Pro | Arg | Leu | Glu | Ile | Tyr | Gln | Glu | Asp | Gln | Ile | His | Phe | 170 | 175 | 180 |
| Met | Cys | Pro | Leu | Ala | Arg | Gln | Gly | Asp | Phe | Tyr | Val | Pro | Glu | Met | 185 | 190 | 195 |
| Lys | Glu | Thr | Glu | Trp | Lys | Trp | Arg | Gly | Leu | Val | Glu | Ala | Ile | Asp | 200 | 205 | 210 |
| Thr | Gln | Val | Asp | Gly | Thr | Gly | Ala | Asp | Thr | Met | Ser | Asp | Thr | Ser | 215 | 220 | 225 |
| Ser | Val | Ser | Leu | Glu | Val | Ser | Pro | Gly | Ser | Arg | Glu | Thr | Ser | Ala | 230 | 235 | 240 |
| Ala | Thr | Leu | Ser | Pro | Gly | Ala | Ser | Ser | Arg | Gly | Trp | Asp | Asp | Gly | 245 | 250 | 255 |
| Asp | Thr | Arg | Ser | Glu | His | Ser | Tyr | Ser | Glu | Ser | Gly | Ala | Ser | Gly | 260 | 265 | 270 |
| Ser | Ser | Phe | Glu | Glu | Leu | Asp | Leu | Glu | Gly | Glu | Gly | Pro | Leu | Gly | 275 | 280 | 285 |
| Glu | Ser | Arg | Leu | Asp | Pro | Gly | Thr | Glu | Pro | Leu | Gly | Thr | Thr | Lys | 290 | 295 | 300 |
| Trp | Leu | Trp | Glu | Pro | Thr | Ala | Pro | Glu | Lys | Gly | Lys | Glu | | | 305 | 310 | |

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 <211> 725
 <212> DNA
 <213> Homo sapiens

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 cccgtccat ctgctgctgc tgctgctgct cagtgcggcg gtgtgccggg 150
 ctgaggctgg gctcgaaacc gaaagtccc tccggaccct ccaagtggag 200
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Asn Lys Ser Lys Lys Lys
200

<210> 100
<211> 705
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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accctctggt tatagaactt ggccaaaagc aggtgattcc aggtctggag 200
cagagtcttc tcgacatgtg tgtgggagag aagcgaaggg caatcattcc 250
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tactggctaa agctggtgaa gggcattttg cctctggtag ggatggccat 400

ggtgccagcc ctcttgggcc tcattgggta tcacctatac agaaaggcca 450
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 agcaaaaaga aataataaat aataaatttt aaaaaactta aaa 543

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 gagggcttga gatgctcaga atgcattgac tggggggaaa agcgcaatac 200
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<210> 103

<211> 157

<212> PRT

<213> Homo sapiens

<400> 103

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Leu Phe Phe Thr Gly Trp Trp Ile Ile Ile Asp Ala Ala Val Ile
35 40 45
Tyr Pro Thr Met Lys Asp Phe Asn His Ser Tyr His Ala Cys Gly
50 55 60
Val Ile Ala Thr Ile Ala Phe Leu Met Ile Asn Ala Val Ser Asn
65 70 75
Gly Gln Val Arg Gly Asp Ser Tyr Ser Glu Gly Cys Leu Gly Gln
80 85 90
Thr Gly Ala Arg Ile Trp Leu Phe Val Gly Phe Met Leu Ala Phe
95 100 105
Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Gly Tyr Val
110 115 120
Ala Lys Glu Lys Asp Ile Val Tyr Pro Gly Ile Ala Val Phe Phe
125 130 135
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Arg Thr Glu Asp Leu Trp Gln
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<211> 545

<212> DNA

<213> Homo sapiens

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<211> 377

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 52, 67, 70, 78, 105, 144, 150, 209, 266, 268, 282, 310, 331, 356

<223> unknown base

<400> 107

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ttatnataga tgcagctgtt atttatccca ccatgaaaga tttnaaccan 150

tcataccatg cctgtggtgt tatagcaacc atagccttcc taatgattaa 200

tgcagtatng aatggacaag tccgaggtga tagttacagt gaaggttggt 250

tgggtcaaac aggtgntngc atttggcttt tngttggttt catgttggcc 300

tttggatctn tgattgcatt tatgtggatt ntttttggag gttatgttgc 350

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<210> 108

<211> 552

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 12, 25, 65, 130, 437, 537

<223> unknown base

<400> 108

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gaatgcattg actgggggga aaagcgcaat actattgctt ccattgctgc 200

tgggtgacta ttttttacag gctggtggat tatcatagat gcagctgtta 250

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atagcaacca tagccttcct aatgattaat gcagtatcga atggacaagt 350

ccgaggtgat agttacagtg aaggttgtct ggggtcaaaca ggtgctcgca 400

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<400> 109
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<210> 110
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<400> 110
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<223> Synthetic oligonucleotide probe

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<210> 112
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 <211> 610
 <212> PRT
 <213> Homo sapiens

<400> 113
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 35 40 45
 Thr Asp Lys Glu Ala Arg Lys Lys Val Leu Lys Gln Ala Phe Ser
 50 55 60
 Ala Asn Gln Val Pro Glu Lys Leu Asp Val Val Val Ile Gly Ser
 65 70 75
 Gly Phe Gly Gly Leu Ala Ala Ala Ala Ile Leu Ala Lys Ala Gly
 80 85 90
 Lys Arg Val Leu Val Leu Glu Gln His Thr Lys Ala Gly Gly Cys
 95 100 105

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | His | Thr | Phe | Gly | Lys | Asn | Gly | Leu | Glu | Phe | Asp | Thr | Gly | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| His | Tyr | Ile | Gly | Arg | Met | Glu | Glu | Gly | Ser | Ile | Gly | Arg | Phe | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Asp | Gln | Ile | Thr | Glu | Gly | Gln | Leu | Asp | Trp | Ala | Pro | Leu | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Pro | Phe | Asp | Ile | Met | Val | Leu | Glu | Gly | Pro | Asn | Gly | Arg | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Glu | Tyr | Pro | Met | Tyr | Ser | Gly | Glu | Lys | Ala | Tyr | Ile | Gln | Gly | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Lys | Glu | Lys | Phe | Pro | Gln | Glu | Glu | Ala | Ile | Ile | Asp | Lys | Tyr | Ile |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | Leu | Val | Lys | Val | Val | Ser | Ser | Gly | Ala | Pro | His | Ala | Ile | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Lys | Phe | Leu | Pro | Leu | Pro | Val | Val | Gln | Leu | Leu | Asp | Arg | Cys |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Leu | Leu | Thr | Arg | Phe | Ser | Pro | Phe | Leu | Gln | Ala | Ser | Thr | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ser | Leu | Ala | Glu | Val | Leu | Gln | Gln | Leu | Gly | Ala | Ser | Ser | Glu | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Ala | Val | Leu | Ser | Tyr | Ile | Phe | Pro | Thr | Tyr | Gly | Val | Thr | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Asn | His | Ser | Ala | Phe | Ser | Met | His | Ala | Leu | Leu | Val | Asn | His | Tyr |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Met | Lys | Gly | Gly | Phe | Tyr | Pro | Arg | Gly | Gly | Ser | Ser | Glu | Ile | Ala |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Phe | His | Thr | Ile | Pro | Val | Ile | Gln | Arg | Ala | Gly | Gly | Ala | Val | Leu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Thr | Lys | Ala | Thr | Val | Gln | Ser | Val | Leu | Leu | Asp | Ser | Ala | Gly | Lys |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ala | Cys | Gly | Val | Ser | Val | Lys | Lys | Gly | His | Glu | Leu | Val | Asn | Ile |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Tyr | Cys | Pro | Ile | Val | Val | Ser | Asn | Ala | Gly | Leu | Phe | Asn | Thr | Tyr |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Glu | His | Leu | Leu | Pro | Gly | Asn | Ala | Arg | Cys | Leu | Pro | Gly | Val | Lys |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Gln | Gln | Leu | Gly | Thr | Val | Arg | Pro | Gly | Leu | Gly | Met | Thr | Ser | Val |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Phe | Ile | Cys | Leu | Arg | Gly | Thr | Lys | Glu | Asp | Leu | His | Leu | Pro | Ser |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Thr | Asn | Tyr | Tyr | Val | Tyr | Tyr | Asp | Thr | Asp | Met | Asp | Gln | Ala | Met |
| | | | | 410 | | | | | 415 | | | | | 420 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Arg | Tyr | Val | Ser | Met | Pro | Arg | Glu | Glu | Ala | Ala | Glu | His | Ile | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Pro | Leu | Leu | Phe | Phe | Ala | Phe | Pro | Ser | Ala | Lys | Asp | Pro | Thr | Trp | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Glu | Asp | Arg | Phe | Pro | Gly | Arg | Ser | Thr | Met | Ile | Met | Leu | Ile | Pro | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Thr | Ala | Tyr | Glu | Trp | Phe | Glu | Glu | Trp | Gln | Ala | Glu | Leu | Lys | Gly | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Arg | Gly | Ser | Asp | Tyr | Glu | Thr | Phe | Lys | Asn | Ser | Phe | Val | Glu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ala | Ser | Met | Ser | Val | Val | Leu | Lys | Leu | Phe | Pro | Gln | Leu | Glu | Gly | |
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| Lys | Val | Glu | Ser | Val | Thr | Ala | Gly | Ser | Pro | Leu | Thr | Asn | Gln | Phe | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Tyr | Leu | Ala | Ala | Pro | Arg | Gly | Ala | Cys | Tyr | Gly | Ala | Asp | His | Asp | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Leu | Gly | Arg | Leu | His | Pro | Cys | Val | Met | Ala | Ser | Leu | Arg | Ala | Gln | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Ser | Pro | Ile | Pro | Asn | Leu | Tyr | Leu | Thr | Gly | Gln | Asp | Ile | Phe | Thr | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Cys | Gly | Leu | Val | Gly | Ala | Leu | Gln | Gly | Ala | Leu | Leu | Cys | Ser | Ser | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Ala | Ile | Leu | Lys | Arg | Asn | Leu | Tyr | Ser | Asp | Leu | Lys | Asn | Leu | Asp | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Ser | Arg | Ile | Arg | Ala | Gln | Lys | Lys | Lys | Asn | | | | | | |
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 <212> DNA
 <213> Homo sapiens

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<210> 115

<211> 301

<212> PRT

<213> Homo sapiens

<400> 115

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ser | Leu | Asp | Ser | Lys | Thr | Thr | Leu | Thr | Ser | Asp | Glu | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Asp | His | Thr | Thr | Ala | Gly | Arg | Val | Val | Ala | Gly | Gln | Ile | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Asp | Ser | Glu | Glu | Ser | Glu | Leu | Glu | Ser | Ser | Ile | Gln | Glu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Asp | Ser | Leu | Lys | Ser | Gln | Glu | Gly | Glu | Ser | Val | Thr | Glu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Ser | Phe | Leu | Glu | Ser | Pro | Asn | Pro | Glu | Asn | Lys | Asp | Tyr | Glu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Pro | Lys | Lys | Val | Arg | Lys | Pro | Ala | Leu | Thr | Ala | Ile | Glu | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Ala | His | Gly | Glu | Pro | Cys | His | Phe | Pro | Phe | Leu | Phe | Leu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Glu | Tyr | Asp | Glu | Cys | Thr | Ser | Asp | Gly | Arg | Glu | Asp | Gly | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Trp | Cys | Ala | Thr | Thr | Tyr | Asp | Tyr | Lys | Ala | Asp | Glu | Lys | Trp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Phe | Cys | Glu | Thr | Glu | Glu | Glu | Ala | Ala | Lys | Arg | Arg | Gln | Met |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Glu | Ala | Glu | Met | Met | Tyr | Gln | Thr | Gly | Met | Lys | Ile | Leu | Asn |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Ser | Asn | Lys | Lys | Ser | Gln | Lys | Arg | Glu | Ala | Tyr | Arg | Tyr | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Lys | Ala | Ala | Ser | Met | Asn | His | Thr | Lys | Ala | Leu | Glu | Arg | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Tyr | Ala | Leu | Leu | Phe | Gly | Asp | Tyr | Leu | Pro | Gln | Asn | Ile | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Ala | Arg | Glu | Met | Phe | Glu | Lys | Leu | Thr | Glu | Glu | Gly | Ser | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Gly | Gln | Thr | Ala | Leu | Gly | Phe | Leu | Tyr | Ala | Ser | Gly | Leu | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Asn | Ser | Ser | Gln | Ala | Lys | Ala | Leu | Val | Tyr | Tyr | Thr | Phe | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ala | Leu | Gly | Gly | Asn | Leu | Ile | Ala | His | Met | Val | Leu | Val | Ser | Arg |
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Leu

<210> 116
 <211> 584
 <212> DNA
 <213> Homo sapiens
 <400> 116

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<210> 117

<211> 123

<212> PRT

<213> Homo sapiens

<400> 117

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| Met | Ala | Cys | Arg | Cys | Leu | Ser | Phe | Leu | Leu | Met | Gly | Thr | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Val | Ser | Gln | Thr | Val | Leu | Ala | Gln | Leu | Asp | Ala | Leu | Leu | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Pro | Gly | Gln | Val | Ala | Gln | Leu | Ser | Cys | Thr | Leu | Ser | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| His | Val | Thr | Ile | Arg | Asp | Tyr | Gly | Val | Ser | Trp | Tyr | Gln | Gln | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Gly | Ser | Ala | Pro | Arg | Tyr | Leu | Leu | Tyr | Tyr | Arg | Ser | Glu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | His | His | Arg | Pro | Ala | Asp | Ile | Pro | Asp | Arg | Phe | Ser | Ala | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Asp | Glu | Ala | His | Asn | Ala | Cys | Val | Leu | Thr | Ile | Ser | Pro | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gln | Pro | Glu | Asp | Asp | Ala | Asp | Tyr | Tyr | Cys | Ser | Val | Gly | Tyr | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Phe | Ser | Pro | | | | | | | | | | | | |

<210> 118

<211> 3402

<212> DNA

<213> Homo sapiens

<400> 118

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Arg | Thr | Arg | Ser | Lys | Pro | Val | Leu | Thr | Gly | Thr | His | Pro | Val | Asn | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Thr | Thr | Val | Asp | Phe | Gly | Gly | Thr | Thr | Ser | Phe | Gln | Cys | Lys | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Ser | Asp | Val | Lys | Pro | Val | Ile | Gln | Trp | Leu | Lys | Arg | Val | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Tyr | Gly | Ala | Glu | Gly | Arg | His | Asn | Ser | Thr | Ile | Asp | Val | Gly | Gly | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Lys | Phe | Val | Val | Leu | Pro | Thr | Gly | Asp | Val | Trp | Ser | Arg | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Asp | Gly | Ser | Tyr | Leu | Asn | Lys | Leu | Leu | Ile | Thr | Arg | Ala | Arg | Gln | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asp | Asp | Ala | Gly | Met | Tyr | Ile | Cys | Leu | Gly | Ala | Asn | Thr | Met | Gly | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Tyr | Ser | Phe | Arg | Ser | Ala | Phe | Leu | Thr | Val | Leu | Pro | Asp | Pro | Lys | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Pro | Pro | Gly | Pro | Pro | Val | Ala | Ser | Ser | Ser | Ser | Ala | Thr | Ser | Leu | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Pro | Trp | Pro | Val | Val | Ile | Gly | Ile | Pro | Ala | Gly | Ala | Val | Phe | Ile | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Gly | Thr | Leu | Leu | Leu | Trp | Leu | Cys | Gln | Ala | Gln | Lys | Lys | Pro | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Cys | Thr | Pro | Ala | Pro | Ala | Pro | Pro | Leu | Pro | Gly | His | Arg | Pro | Pro | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Gly | Thr | Ala | Arg | Asp | Arg | Ser | Gly | Asp | Lys | Asp | Leu | Pro | Ser | Leu | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ala | Ala | Leu | Ser | Ala | Gly | Pro | Gly | Val | Gly | Leu | Cys | Glu | Glu | His | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Gly | Ser | Pro | Ala | Ala | Pro | Gln | His | Leu | Leu | Gly | Pro | Gly | Pro | Val | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Ala | Gly | Pro | Lys | Leu | Tyr | Pro | Lys | Leu | Tyr | Thr | Asp | Ile | His | Thr | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| His | Thr | His | Thr | His | Ser | His | Thr | His | Ser | His | Val | Glu | Gly | Lys | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Val | His | Gln | His | Ile | His | Tyr | Gln | Cys | | | | | | | |
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<210> 120

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 120

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<210> 121

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 121

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<210> 122

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 122

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<210> 123

<211> 4420

<212> DNA

<213> Homo sapiens

<400> 123

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gcggctggac gccattcgct tctactatgg ggaccgtgta tgtgcccgtc 400

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<210> 124

<211> 1184

<212> PRT

<213> Homo sapiens

<400> 124

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| Met | Val | Gly | Thr | Lys | Ala | Trp | Val | Phe | Ser | Phe | Leu | Val | Leu | Glu | 1 | 5 | 10 | 15 |
| Val | Thr | Ser | Val | Leu | Gly | Arg | Gln | Thr | Met | Leu | Thr | Gln | Ser | Val | 20 | 25 | 30 | |
| Arg | Arg | Val | Gln | Pro | Gly | Lys | Lys | Asn | Pro | Ser | Ile | Phe | Ala | Lys | 35 | 40 | 45 | |
| Pro | Ala | Asp | Thr | Leu | Glu | Ser | Pro | Gly | Glu | Trp | Thr | Thr | Trp | Phe | 50 | 55 | 60 | |
| Asn | Ile | Asp | Tyr | Pro | Gly | Gly | Lys | Gly | Asp | Tyr | Glu | Arg | Leu | Asp | 65 | 70 | 75 | |
| Ala | Ile | Arg | Phe | Tyr | Tyr | Gly | Asp | Arg | Val | Cys | Ala | Arg | Pro | Leu | 80 | 85 | 90 | |
| Arg | Leu | Glu | Ala | Arg | Thr | Thr | Asp | Trp | Thr | Pro | Ala | Gly | Ser | Thr | 95 | 100 | 105 | |
| Gly | Gln | Val | Val | His | Gly | Ser | Pro | Arg | Glu | Gly | Phe | Trp | Cys | Leu | 110 | 115 | 120 | |
| Asn | Arg | Glu | Gln | Arg | Pro | Gly | Gln | Asn | Cys | Ser | Asn | Tyr | Thr | Val | 125 | 130 | 135 | |
| Arg | Phe | Leu | Cys | Pro | Pro | Gly | Ser | Leu | Arg | Arg | Asp | Thr | Glu | Arg | 140 | 145 | 150 | |
| Ile | Trp | Ser | Pro | Trp | Ser | Pro | Trp | Ser | Lys | Cys | Ser | Ala | Ala | Cys | 155 | 160 | 165 | |
| Gly | Gln | Thr | Gly | Val | Gln | Thr | Arg | Thr | Arg | Ile | Cys | Leu | Ala | Glu | 170 | 175 | 180 | |
| Met | Val | Ser | Leu | Cys | Ser | Glu | Ala | Ser | Glu | Glu | Gly | Gln | His | Cys | 185 | 190 | 195 | |
| Met | Gly | Gln | Asp | Cys | Thr | Ala | Cys | Asp | Leu | Thr | Cys | Pro | Met | Gly | 200 | 205 | 210 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Gln Val Asn Ala | Asp Cys Asp Ala Cys | Met Cys Gln Asp Phe | Met |
| | 215 | 220 | 225 |
| Leu His Gly Ala | Val Ser Leu Pro Gly | Gly Ala Pro Ala Ser | Gly |
| | 230 | 235 | 240 |
| Ala Ala Ile Tyr | Leu Leu Thr Lys Thr | Pro Lys Leu Leu Thr | Gln |
| | 245 | 250 | 255 |
| Thr Asp Ser Asp | Gly Arg Phe Arg Ile | Pro Gly Leu Cys Pro | Asp |
| | 260 | 265 | 270 |
| Gly Lys Ser Ile | Leu Lys Ile Thr Lys | Val Lys Phe Ala Pro | Ile |
| | 275 | 280 | 285 |
| Val Leu Thr Met | Pro Lys Thr Ser Leu | Lys Ala Ala Thr Ile | Lys |
| | 290 | 295 | 300 |
| Ala Glu Phe Val | Arg Ala Glu Thr Pro | Tyr Met Val Met Asn | Pro |
| | 305 | 310 | 315 |
| Glu Thr Lys Ala | Arg Arg Ala Gly Gln | Ser Val Ser Leu Cys | Cys |
| | 320 | 325 | 330 |
| Lys Ala Thr Gly | Lys Pro Arg Pro Asp | Lys Tyr Phe Trp Tyr | His |
| | 335 | 340 | 345 |
| Asn Asp Thr Leu | Leu Asp Pro Ser Leu | Tyr Lys His Glu Ser | Lys |
| | 350 | 355 | 360 |
| Leu Val Leu Arg | Lys Leu Gln Gln His | Gln Ala Gly Glu Tyr | Phe |
| | 365 | 370 | 375 |
| Cys Lys Ala Gln | Ser Asp Ala Gly Ala | Val Lys Ser Lys Val | Ala |
| | 380 | 385 | 390 |
| Gln Leu Ile Val | Thr Ala Ser Asp Glu | Thr Pro Cys Asn Pro | Val |
| | 395 | 400 | 405 |
| Pro Glu Ser Tyr | Leu Ile Arg Leu Pro | His Asp Cys Phe Gln | Asn |
| | 410 | 415 | 420 |
| Ala Thr Asn Ser | Phe Tyr Tyr Asp Val | Gly Arg Cys Pro Val | Lys |
| | 425 | 430 | 435 |
| Thr Cys Ala Gly | Gln Gln Asp Asn Gly | Ile Arg Cys Arg Asp | Ala |
| | 440 | 445 | 450 |
| Val Gln Asn Cys | Cys Gly Ile Ser Lys | Thr Glu Glu Arg Glu | Ile |
| | 455 | 460 | 465 |
| Gln Cys Ser Gly | Tyr Thr Leu Pro Thr | Lys Val Ala Lys Glu | Cys |
| | 470 | 475 | 480 |
| Ser Cys Gln Arg | Cys Thr Glu Thr Arg | Ser Ile Val Arg Gly | Arg |
| | 485 | 490 | 495 |
| Val Ser Ala Ala | Asp Asn Gly Glu Pro | Met Arg Phe Gly His | Val |
| | 500 | 505 | 510 |
| Tyr Met Gly Asn | Ser Arg Val Ser Met | Thr Gly Tyr Lys Gly | Thr |
| | 515 | 520 | 525 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|------|------|
| Lys | Phe | Asn | Pro | Asn | Ala | Ile | Gly | Val | Pro | Gln | Pro | Tyr | Leu | Asn | | 845 | 850 | 855 |
| Lys | Leu | Asn | Tyr | Arg | Arg | Thr | Asp | His | Glu | Asp | Pro | Arg | Val | Lys | | 860 | 865 | 870 |
| Lys | Thr | Ala | Phe | Gln | Ile | Ser | Met | Ala | Lys | Pro | Arg | Pro | Asn | Ser | | 875 | 880 | 885 |
| Ala | Glu | Glu | Ser | Asn | Gly | Pro | Ile | Tyr | Ala | Phe | Glu | Asn | Leu | Arg | | 890 | 895 | 900 |
| Ala | Cys | Glu | Glu | Ala | Pro | Pro | Ser | Ala | Ala | His | Phe | Arg | Phe | Tyr | | 905 | 910 | 915 |
| Gln | Ile | Glu | Gly | Asp | Arg | Tyr | Asp | Tyr | Asn | Thr | Val | Pro | Phe | Asn | | 920 | 925 | 930 |
| Glu | Asp | Asp | Pro | Met | Ser | Trp | Thr | Glu | Asp | Tyr | Leu | Ala | Trp | Trp | | 935 | 940 | 945 |
| Pro | Lys | Pro | Met | Glu | Phe | Arg | Ala | Cys | Tyr | Ile | Lys | Val | Lys | Ile | | 950 | 955 | 960 |
| Val | Gly | Pro | Leu | Glu | Val | Asn | Val | Arg | Ser | Arg | Asn | Met | Gly | Gly | | 965 | 970 | 975 |
| Thr | His | Arg | Arg | Thr | Val | Gly | Lys | Leu | Tyr | Gly | Ile | Arg | Asp | Val | | 980 | 985 | 990 |
| Arg | Ser | Thr | Arg | Asp | Arg | Asp | Gln | Pro | Asn | Val | Ser | Ala | Ala | Cys | | 995 | 1000 | 1005 |
| Leu | Glu | Phe | Lys | Cys | Ser | Gly | Met | Leu | Tyr | Asp | Gln | Asp | Arg | Val | | 1010 | 1015 | 1020 |
| Asp | Arg | Thr | Leu | Val | Lys | Val | Ile | Pro | Gln | Gly | Ser | Cys | Arg | Arg | | 1025 | 1030 | 1035 |
| Ala | Ser | Val | Asn | Pro | Met | Leu | His | Glu | Tyr | Leu | Val | Asn | His | Leu | | 1040 | 1045 | 1050 |
| Pro | Leu | Ala | Val | Asn | Asn | Asp | Thr | Ser | Glu | Tyr | Thr | Met | Leu | Ala | | 1055 | 1060 | 1065 |
| Pro | Leu | Asp | Pro | Leu | Gly | His | Asn | Tyr | Gly | Ile | Tyr | Thr | Val | Thr | | 1070 | 1075 | 1080 |
| Asp | Gln | Asp | Pro | Arg | Thr | Ala | Lys | Glu | Ile | Ala | Leu | Gly | Arg | Cys | | 1085 | 1090 | 1095 |
| Phe | Asp | Gly | Thr | Ser | Asp | Gly | Ser | Ser | Arg | Ile | Met | Lys | Ser | Asn | | 1100 | 1105 | 1110 |
| Val | Gly | Val | Ala | Leu | Thr | Phe | Asn | Cys | Val | Glu | Arg | Gln | Val | Gly | | 1115 | 1120 | 1125 |
| Arg | Gln | Ser | Ala | Phe | Gln | Tyr | Leu | Gln | Ser | Thr | Pro | Ala | Gln | Ser | | 1130 | 1135 | 1140 |
| Pro | Ala | Ala | Gly | Thr | Val | Gln | Gly | Arg | Val | Pro | Ser | Arg | Arg | Gln | | 1145 | 1150 | 1155 |

Gln Arg Ala Ser Arg Gly Gly Gln Arg Gln Gly Gly Val Val Ala
 1160 1165 1170

Ser Leu Arg Phe Pro Arg Val Ala Gln Gln Pro Leu Ile Asn
 1175 1180

<210> 125
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 125
 ctggtgcctc aacagggagc ag 22

<210> 126
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 126
 ccattgtgca ggtcagggtca cag 23

<210> 127
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 127
 ctggagcaag tgctcagctg cctgtgggtca gactgggggtc 40

<210> 128
 <211> 2819
 <212> DNA
 <213> Homo sapiens

<400> 128
 ctgcaagttg ttaacgccta acacacaagt atgttaggct tccaccaaag 50
 tcctcaatat acctgaatac gcacaatata ttaactcttc atatttggtt 100
 ttgggatctg ctttgagggtc ccatcttcat ttaaaaaaaaa atacagagac 150
 ctacctaccc gtacgcatac atacatatgt gtatatatat gtaaactaga 200
 caaagatcgc agatcataaa gcaagctctg ctttagtttc caagaagatt 250
 acaaagaatt tagagatgta tttgtcaaga tccctgtcga ttcatgccct 300
 ttgggttacg gtgtcctcag tgatgcagcc ctaccctttg gtttggggac 350
 attatgattt gtgtaagact cagatttaca cggaagaagg gaaagtttgg 400
 gattacatgg cctgccagcc ggaatccaag gacatgacaa aatatctgaa 450

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| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Leu Ser Trp Ser | Lys Thr Ile Glu Leu | Thr Asp Asn Ile Val | Ile | | |
| | 140 | 145 | 150 | | |
| Thr Phe Glu Ser | Gly Arg Pro Asp Gln | Met Ile Leu Glu Lys | Ser | | |
| | 155 | 160 | 165 | | |
| Leu Asp Tyr Gly | Arg Thr Trp Gln Pro | Tyr Gln Tyr Tyr Ala | Thr | | |
| | 170 | 175 | 180 | | |
| Asp Cys Leu Asp | Ala Phe His Met Asp | Pro Lys Ser Val Lys | Asp | | |
| | 185 | 190 | 195 | | |
| Leu Ser Gln His | Thr Val Leu Glu Ile | Ile Cys Thr Glu Glu | Tyr | | |
| | 200 | 205 | 210 | | |
| Ser Thr Gly Tyr | Thr Thr Asn Ser Lys | Ile Ile His Phe Glu | Ile | | |
| | 215 | 220 | 225 | | |
| Lys Asp Arg Phe | Ala Leu Phe Ala Gly | Pro Arg Leu Arg Asn | Met | | |
| | 230 | 235 | 240 | | |
| Ala Ser Leu Tyr | Gly Gln Leu Asp Thr | Thr Lys Lys Leu Arg | Asp | | |
| | 245 | 250 | 255 | | |
| Phe Phe Thr Val | Thr Asp Leu Arg Ile | Arg Leu Leu Arg Pro | Ala | | |
| | 260 | 265 | 270 | | |
| Val Gly Glu Ile | Phe Val Asp Glu Leu | His Leu Ala Arg Tyr | Phe | | |
| | 275 | 280 | 285 | | |
| Tyr Ala Ile Ser | Asp Ile Lys Val Arg | Gly Arg Cys Lys Cys | Asn | | |
| | 290 | 295 | 300 | | |
| Leu His Ala Thr | Val Cys Val Tyr Asp | Asn Ser Lys Leu Thr | Cys | | |
| | 305 | 310 | 315 | | |
| Glu Cys Glu His | Asn Thr Thr Gly Pro | Asp Cys Gly Lys Cys | Lys | | |
| | 320 | 325 | 330 | | |
| Lys Asn Tyr Gln | Gly Arg Pro Trp Ser | Pro Gly Ser Tyr Leu | Pro | | |
| | 335 | 340 | 345 | | |
| Ile Pro Lys Gly | Thr Ala Asn Thr Cys | Ile Pro Ser Ile Ser | Ser | | |
| | 350 | 355 | 360 | | |
| Ile Gly Thr Asn | Val Cys Asp Asn Glu | Leu Leu His Cys Gln | Asn | | |
| | 365 | 370 | 375 | | |
| Gly Gly Thr Cys | His Asn Asn Val Arg | Cys Leu Cys Pro Ala | Ala | | |
| | 380 | 385 | 390 | | |
| Tyr Thr Gly Ile | Leu Cys Glu Lys Leu | Arg Cys Glu Glu Ala | Gly | | |
| | 395 | 400 | 405 | | |
| Ser Cys Gly Ser | Asp Ser Gly Gln Gly | Ala Pro Pro His Gly | Thr | | |
| | 410 | 415 | 420 | | |
| Pro Ala Leu Leu | Leu Leu Thr Thr Leu | Leu Gly Thr Ala Ser | Pro | | |
| | 425 | 430 | 435 | | |
| Leu Val Phe | | | | | |

<210> 130
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 130
tcgattatgg acgaacatgg cagc 24

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 131
ttctgagatc cctcatcctc 20

<210> 132
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 132
aggttcaggg acagcaagtt tggg 24

<210> 133
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 133
tttgctggac ctcggtacg gaattggctt ccctctacgg acagctggat 50

<210> 134
<211> 1493
<212> DNA
<213> Homo sapiens

<400> 134
cccacgcgtc cgggtgacct gggccgagcc ctcccggtcg gctaagattg 50
ctgaggaggc ggcgggtagc tggcaggcgc cgacttccga aggccgcgct 100
ccgggcgagg tgtcctcatg acttctcttg tggaccatgt ccgtgatctt 150
ttttgcctgc gtggtacggg taagggatgg actgcccctc tcagcctcta 200
ctgattttta ccacacccaa gatttttttg aatggaggag acggctcaag 250
agtttagcct tgcgactggc ccagtatcca ggtcgagggt ctgcagaagg 300

ttgtgacttt agtatacatt tttcttcttt cggggacgtg gcctgcatgg 350
 ctatctgctc ctgccagtgt ccagcagcca tggccttctg cttcctggag 400
 accctgtggt gggaattcac agcttcctat gacactacct gcattggcct 450
 agcctccagg ccatacgctt ttcttgagtt tgacagcatc attcagaaaag 500
 tgaagtggca ttttaactat gtaagttcct ctcagatgga gtgcagcttg 550
 gaaaaaattc aggaggagct caagttgcag cctccagcgg ttctcactct 600
 ggaggacaca gatgtggcaa atgggggtgat gaatggtcac acaccgatgc 650
 acttgagacc tgctcctaatt ttccgaatgg aaccagtgc agccctgggt 700
 atcctctccc tcattotcaa catcatgtgt gctgccctga atctcattcg 750
 aggagtccac cttgcagaac attctttaca ggatccaagg agctggttct 800
 gctggttga ccaaacctcg tgagccagcc acccctgacc caaatgagga 850
 gagctctgat tctcccatcc gggagcagtg atgtcaaact tctgctgctg 900
 gggaaatctc atcagcaggg agcctgtgga aaagggcatg tcagtgaat 950
 ctgggaatgg ctggattcgg aaacatctgc ccatgtgtat tgatggcaga 1000
 gctgttgccc acaagcgctt tttatctagg gtaaaattaa caaatccatt 1050
 ctattcctct gaccatgct tagtacatat gacctttaac ccttacattt 1100
 atatgattct ggggttgctt cagaagtgtt atttcatgaa tcattcatat 1150
 gatttgatcc ccaggatcc tattttgttt aatgggcttt tctactaaaa 1200
 gcataaaata ctgaggctga tttagtcagg gcaaaaccat ttactttaca 1250
 tattcgtttt caatacttgc tgttcatgtt acacaagctt cttacggttt 1300
 tcttgtaaca ataaatattt tgagtaaata atgggtacat tttaacaaac 1350
 tcagtagtac aacctaaact tgtataaaag tgtgtaaaaa tgtatagcca 1400
 tttatatcct atgtataaat taaatgaggt ggcttcagaa atggcagaat 1450
 aaatctaaag tgtttattaa aaaaaaaaaa aaaaaaaaaa aag 1493

<210> 135

<211> 228

<212> PRT

<213> Homo sapiens

<400> 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Val | Ile | Phe | Phe | Ala | Cys | Val | Val | Arg | Val | Arg | Asp | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Ser | Ala | Ser | Thr | Asp | Phe | Tyr | His | Thr | Gln | Asp | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Trp | Arg | Arg | Arg | Leu | Lys | Ser | Leu | Ala | Leu | Arg | Leu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Tyr | Pro | Gly | Arg | Gly | Ser | Ala | Glu | Gly | Cys | Asp | Phe | Ser | Ile | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| His | Phe | Ser | Ser | Phe | Gly | Asp | Val | Ala | Cys | Met | Ala | Ile | Cys | Ser | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Cys | Gln | Cys | Pro | Ala | Ala | Met | Ala | Phe | Cys | Phe | Leu | Glu | Thr | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Trp | Trp | Glu | Phe | Thr | Ala | Ser | Tyr | Asp | Thr | Thr | Cys | Ile | Gly | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Ser | Arg | Pro | Tyr | Ala | Phe | Leu | Glu | Phe | Asp | Ser | Ile | Ile | Gln | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Lys | Val | Lys | Trp | His | Phe | Asn | Tyr | Val | Ser | Ser | Ser | Gln | Met | Glu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Cys | Ser | Leu | Glu | Lys | Ile | Gln | Glu | Glu | Leu | Lys | Leu | Gln | Pro | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Val | Leu | Thr | Leu | Glu | Asp | Thr | Asp | Val | Ala | Asn | Gly | Val | Met | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Asn | Gly | His | Thr | Pro | Met | His | Leu | Glu | Pro | Ala | Pro | Asn | Phe | Arg | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Met | Glu | Pro | Val | Thr | Ala | Leu | Gly | Ile | Leu | Ser | Leu | Ile | Leu | Asn | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ile | Met | Cys | Ala | Ala | Leu | Asn | Leu | Ile | Arg | Gly | Val | His | Leu | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | His | Ser | Leu | Gln | Asp | Pro | Arg | Ser | Trp | Phe | Cys | Trp | Leu | Asp | |
| | | | | 215 | | | | | 220 | | | | | 225 | |

Gln Thr Ser

<210> 136
 <211> 239
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 61, 143, 209
 <223> unknown base

<400> 136
 tgcttctgtg agaccctgtg gtgggaattc acagcttcnt atgacactac 50
 ctgcattggc ntagcctcca ggccatacgc ttttcttgag tttgacagca 100
 tcattcagaa agtgaagtgg cattttaact atgtaagttc ctntcagatg 150
 gagtgcagct tggaaaaaat tcaggaggag ctcaagttgc agcctccagc 200
 gggttctcant atggaggaca cagatgtggc aaatgggggt 239

<210> 137
 <211> 2300
 <212> DNA

| Variable | Mean | SD | Min | Max |
|--------------------------|-------------|------|-----|-----|
| Age | 35.2 | 10.5 | 18 | 65 |
| Gender | Male | 100% | | |
| Marital status | Married | 100% | | |
| Education | High school | 100% | | |
| Occupation | Teacher | 100% | | |
| Income | 1000 TL | 100% | | |
| Religion | Islam | 100% | | |
| Health status | Good | 100% | | |
| Smoking status | Non-smoker | 100% | | |
| Alcohol consumption | Non-drinker | 100% | | |
| Stress level | Low | 100% | | |
| Life satisfaction | High | 100% | | |
| Self-esteem | High | 100% | | |
| Resilience | High | 100% | | |
| Optimism | High | 100% | | |
| Emotional stability | High | 100% | | |
| Psychological well-being | High | 100% | | |
| Life satisfaction | High | 100% | | |
| Self-esteem | High | 100% | | |
| Resilience | High | 100% | | |
| Optimism | High | 100% | | |
| Emotional stability | High | 100% | | |
| Psychological well-being | High | 100% | | |

400> 137

| | | | | | |
|------------|-------------|------------|-------------|-------------|------|
| ctcagcggcg | cttccctcgta | gcgagcctag | tggcggggtgt | ttgcattgaa | 50 |
| acgtgagcgc | gacccgacct | taaagagtgg | ggagcaaagg | gaggacagag | 100 |
| ccctttaaaa | cgaggcgggt | ggtgcctgcc | cctttaaggg | cggggcggtcc | 150 |
| ggacgactgt | atctgagccc | cagactgccc | cgagtttctg | tcgcaggctg | 200 |
| cgaggaaagg | cccctaggct | gggtctgggt | gcttggcggc | ggcggttcc | 250 |
| tccccgctcg | tcctccccgg | gcccagaggc | acctcggtt | cagtcatgct | 300 |
| gagcagagta | tggaagcacc | tgactacgaa | gtgctatccg | tgcgagaaca | 350 |
| gctattccac | gagaggatcc | gcgagtgtat | tatatcaaca | cttctgtttg | 400 |
| caacactgta | catcctctgc | cacatcttcc | tgaccgcgtt | caagaagcct | 450 |
| gctgagttca | ccacagtgga | tgatgaagat | gccaccgtca | acaagattgc | 500 |
| gctcgagctg | tgcaccttta | ccctggcaat | tgccctgggt | gctgtcctgc | 550 |
| tcctgccctt | ctccatcatc | agcaatgagg | tgctgtcttc | cctgcctcgg | 600 |
| aactactaca | tccagtggct | caacggctcc | ctcatccatg | gcctctggaa | 650 |
| ccttgttttt | ctcttcccc | acctgtccct | catcttcctc | atgccctttg | 700 |
| catatttctt | cactgagtct | gagggctttg | ctggctccag | aaaggggtgc | 750 |
| ctgggcggg | tctatgagac | agtggtgatg | ttgatgtctc | tactctgct | 800 |
| ggtgctaggt | atgggtgtgg | tggcatcagc | cattgtggac | aagaacaagg | 850 |
| ccaacagaga | gtcactctat | gacttttggg | agtactatct | cccctacctc | 900 |
| tactcatgca | tctccttcc | tggggttctg | ctgctcctgg | tgtgtactcc | 950 |
| actgggtctc | gcccgcattg | tctccgtcac | tgggaagctg | ctagtcaagc | 1000 |
| cccggctgct | ggaagacctg | gaggagcagc | tgtactgctc | agcctttgag | 1050 |
| gaggcagccc | tgaccgcgag | gatctgtaat | cctacttcc | gctggctgcc | 1100 |
| tttagacatg | gagctgctac | acagacaggt | cctggctctg | cagacacaga | 1150 |
| gggtcctgct | ggagaagagg | cggaaggctt | cagcctggca | acggaacctg | 1200 |
| ggctaccccc | tggctatgct | gtgcttgctg | gtgctgacgg | gcctgtctgt | 1250 |
| gctcattgtg | gccatccaca | tcctggagct | gctcatcgat | gaggctgcc | 1300 |
| tgccccgagg | catgcagggt | acctccttag | gccaggcttc | cttctccaag | 1350 |
| ctgggctcct | ttggtgccgt | cattcaggtt | gtactcatct | tttaccta | 1400 |
| ggtgtcctca | gttgtgggct | tctatagctc | tccactcttc | cggagcctgc | 1450 |
| ggcccagatg | gcacgacact | gccatgacgc | agataattgg | gaactgtgtc | 1500 |

tgtctcctgg tcctaagctc agcacttcct gtcttctctc gaaccctggg 1550
 gctcactcgc tttgacctgc tgggtgactt tggacgcttc aactggctgg 1600
 gcaatttcta cattgtgttc ctctacaacg cagcctttgc aggcctcacc 1650
 acactctgtc tgggtgaagac cttcactgca gctgtgcggg cagagctgat 1700
 ccgggccttt gggctggaca gactgccgct gcccgtctcc ggtttcccc 1750
 aggcattctag gaagaccag caccagtgc ctccagctgg ggggtgggaag 1800
 gaaaaaactg gacactgcca tctgctgcct aggcctggag ggaagcccaa 1850
 ggctacttgg acctcaggac ctggaatctg agagggtggg tggcagaggg 1900
 gagcagagcc atctgcacta ttgcataatc tgagccagag tttgggacca 1950
 ggacctcctg cttttccata cttaactgtg gcctcagcat ggggtagggc 2000
 tgggtgactg ggtctagccc ctgatcccaa atctgtttac acatcaatct 2050
 gcctcactgc tgttctgggc catccccata gccatgttta catgatttga 2100
 tgtgcaatag ggtggggtag gggcagggaa aggactgggc cagggcaggc 2150
 tcgggagata gattgtctcc cttgcctctg gcccagcaga gcctaagcac 2200
 tgtgctatcc tggaggggct ttggaccacc tgaaagacca aggggatagg 2250
 gaggaggagg cttcagccat cagcaataaa gttgatccca gggaaaaaaa 2300

<210> 138

<211> 489

<212> PRT

<213> Homo sapiens

<400> 138

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ala | Pro | Asp | Tyr | Glu | Val | Leu | Ser | Val | Arg | Glu | Gln | Leu | 1 | 5 | 10 | 15 |
| Phe | His | Glu | Arg | Ile | Arg | Glu | Cys | Ile | Ile | Ser | Thr | Leu | Leu | Phe | 20 | 25 | 30 | |
| Ala | Thr | Leu | Tyr | Ile | Leu | Cys | His | Ile | Phe | Leu | Thr | Arg | Phe | Lys | 35 | 40 | 45 | |
| Lys | Pro | Ala | Glu | Phe | Thr | Thr | Val | Asp | Asp | Glu | Asp | Ala | Thr | Val | 50 | 55 | 60 | |
| Asn | Lys | Ile | Ala | Leu | Glu | Leu | Cys | Thr | Phe | Thr | Leu | Ala | Ile | Ala | 65 | 70 | 75 | |
| Leu | Gly | Ala | Val | Leu | Leu | Leu | Pro | Phe | Ser | Ile | Ile | Ser | Asn | Glu | 80 | 85 | 90 | |
| Val | Leu | Leu | Ser | Leu | Pro | Arg | Asn | Tyr | Tyr | Ile | Gln | Trp | Leu | Asn | 95 | 100 | 105 | |
| Gly | Ser | Leu | Ile | His | Gly | Leu | Trp | Asn | Leu | Val | Phe | Leu | Phe | Pro | 110 | 115 | 120 | |
| Asn | Leu | Ser | Leu | Ile | Phe | Leu | Met | Pro | Phe | Ala | Tyr | Phe | Phe | Thr | | | | |

09969739 44994

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Glu Ser Glu Gly | Phe Ala Gly Ser Arg | Lys Gly Val Leu Gly Arg | | | |
| | 140 | 145 | | | 150 |
| Val Tyr Glu Thr | Val Val Met Leu Met | Leu Leu Thr Leu Leu Val | | | |
| | 155 | 160 | | | 165 |
| Leu Gly Met Val | Trp Val Ala Ser Ala | Ile Val Asp Lys Asn Lys | | | |
| | 170 | 175 | | | 180 |
| Ala Asn Arg Glu | Ser Leu Tyr Asp Phe | Trp Glu Tyr Tyr Leu Pro | | | |
| | 185 | 190 | | | 195 |
| Tyr Leu Tyr Ser | Cys Ile Ser Phe Leu | Gly Val Leu Leu Leu Leu | | | |
| | 200 | 205 | | | 210 |
| Val Cys Thr Pro | Leu Gly Leu Ala Arg | Met Phe Ser Val Thr Gly | | | |
| | 215 | 220 | | | 225 |
| Lys Leu Leu Val | Lys Pro Arg Leu Leu | Glu Asp Leu Glu Glu Gln | | | |
| | 230 | 235 | | | 240 |
| Leu Tyr Cys Ser | Ala Phe Glu Glu Ala | Ala Leu Thr Arg Arg Ile | | | |
| | 245 | 250 | | | 255 |
| Cys Asn Pro Thr | Ser Cys Trp Leu Pro | Leu Asp Met Glu Leu Leu | | | |
| | 260 | 265 | | | 270 |
| His Arg Gln Val | Leu Ala Leu Gln Thr | Gln Arg Val Leu Leu Glu | | | |
| | 275 | 280 | | | 285 |
| Lys Arg Arg Lys | Ala Ser Ala Trp Gln | Arg Asn Leu Gly Tyr Pro | | | |
| | 290 | 295 | | | 300 |
| Leu Ala Met Leu | Cys Leu Leu Val Leu | Thr Gly Leu Ser Val Leu | | | |
| | 305 | 310 | | | 315 |
| Ile Val Ala Ile | His Ile Leu Glu Leu | Leu Ile Asp Glu Ala Ala | | | |
| | 320 | 325 | | | 330 |
| Met Pro Arg Gly | Met Gln Gly Thr Ser | Leu Gly Gln Val Ser Phe | | | |
| | 335 | 340 | | | 345 |
| Ser Lys Leu Gly | Ser Phe Gly Ala Val | Ile Gln Val Val Leu Ile | | | |
| | 350 | 355 | | | 360 |
| Phe Tyr Leu Met | Val Ser Ser Val Val | Gly Phe Tyr Ser Ser Pro | | | |
| | 365 | 370 | | | 375 |
| Leu Phe Arg Ser | Leu Arg Pro Arg Trp | His Asp Thr Ala Met Thr | | | |
| | 380 | 385 | | | 390 |
| Gln Ile Ile Gly | Asn Cys Val Cys Leu | Leu Val Leu Ser Ser Ala | | | |
| | 395 | 400 | | | 405 |
| Leu Pro Val Phe | Ser Arg Thr Leu Gly | Leu Thr Arg Phe Asp Leu | | | |
| | 410 | 415 | | | 420 |
| Leu Gly Asp Phe | Gly Arg Phe Asn Trp | Leu Gly Asn Phe Tyr Ile | | | |
| | 425 | 430 | | | 435 |
| Val Phe Leu Tyr | Asn Ala Ala Phe Ala | Gly Leu Thr Thr Leu Cys | | | |

| | | |
|---|-----|-----|
| 440 | 445 | 450 |
| Leu Val Lys Thr Phe Thr Ala Ala Val Arg Ala Glu Leu Ile Arg | | |
| 455 | 460 | 465 |
| Ala Phe Gly Leu Asp Arg Leu Pro Leu Pro Val Ser Gly Phe Pro | | |
| 470 | 475 | 480 |
| Gln Ala Ser Arg Lys Thr Gln His Gln | | |
| 485 | | |

<210> 139
 <211> 294
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 53, 57
 <223> unknown base

<400> 139
 ggctgcccag ggaaggcccc ttgggttggt cttggttgct tggcggcggc 50
 ggnttcntcc ccgtcgtcc tccccgggcc cagaggcacc tcggcttcag 100
 tcatgctgag cagagtatgg aagcacctga ctacgaagtg ctatccgtgc 150
 gagaacagct attccacgag aggatccgag agtgtattat atcaacactt 200
 ctgtttgcaa cactgtacat cctctgccac atcttctga cccgcttcaa 250
 gaagcctgct gaggttcacca cagtggatga tgaagatgcc accg 294

<210> 140
 <211> 526
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 197, 349
 <223> unknown base

<400> 140
 gaccgacctt aaagagtggg agcaaaggga ggacagagcc ttttaaaacg 50
 aggcgggtggt gctgcccctt taagggcggg gcgtccggac gactgtatct 100
 gagccccaga ctgccccgag tttctgtcgc aggcctgcgag gaaaggcccc 150
 taggctgggt ctggtgcttg gcggcggcgg cttcctcccc gttgtcntcc 200
 ccgggcccag aggcacctcg gcttcagtca tgctgagcag agtatggaag 250
 cacctgacta cgaagtgcta tccgtgcgag aacagctatt ccacgagagg 300
 atccgcgagt gtattatata aacacttctg tttgcaacac tgtacatcnt 350
 ctgccacatc ttctgaccc gcttcaagaa gcctgctgag ttcaccacag 400
 tggatgatga agatgccacc gtcaacaaga ttgcgctcga gctgtgcacc 450

tttaccctgg caattgccct gggtgctgtc ctgctcctgc ctttctccat 500
catcagcaat gaggtgctgc actccc 526

<210> 141
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 141
gactgtatct gagccccaga ctgc 24

<210> 142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 142
tcagcaatga ggtgctgctc 20

<210> 143
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 143
tgaggaagat gagggacagg ttgg 24

<210> 144
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 144
tatggaagca cctgactacg aagtgcctatc cgtgcgagaa cagctattcc 50

<210> 145
<211> 685
<212> DNA
<213> Homo sapiens

<400> 145
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caaacctgtt ttggaattga ggaaacttct cttttgatct cagcccttgg 100
tgggtccagggt cttcatgctg ctgtgggtga tattactggg cctggctcct 150
gtcagtggac agtttgcaag gacaccagg cccattattt tcctccagcc 200
tccatggacc acagtcttcc aaggagagag agtgaccctc acttgcaagg 250

gatttcgctt ctactcacca cagaaaacaa aatggtacca tcggtacctt 300
 gggaaagaaa tactaagaga aaccccagac aatataccttg aggttcagga 350
 atctggagag tacagatgcc agggccaggg ctcccctctc agtagccctg 400
 tgcacttgga tttttcttca gagatgggat ttcctcatgc tgcccaggct 450
 aatgttgaac tcttgggctc aagtgatctg ctcacctagg cctctcaaag 500
 cgctgggatt acagcttcgc tgatcctgca agctccactt tctgtgtttg 550
 aaggagactc tgtggttctg aggtgccggg caaaggcgga agtaacactg 600
 aataatacta tttaacaagaa tgataatgtc ctggcattcc ttaataaaaag 650
 aactgacttc caaaaaaaaa aaaaaaaaaa aaaaa 685

<210> 146
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 146
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 1 5 10 15
 Gln Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro
 20 25 30
 Trp Thr Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys
 35 40 45
 Gly Phe Arg Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg
 50 55 60
 Tyr Leu Gly Lys Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu
 65 70 75
 Glu Val Gln Glu Ser Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser
 80 85 90
 Pro Leu Ser Ser Pro Val His Leu Asp Phe Ser Ser Glu Met Gly
 95 100 105
 Phe Pro His Ala Ala Gln Ala Asn Val Glu Leu Leu Gly Ser Ser
 110 115 120
 Asp Leu Leu Thr

<210> 147
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 147
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 cccccccggt gtgaggcggc ctcacagggc cgggtgggct ggcgagccga 100
 cgcgggcggc gaggaggctg tgaggagtgt gtggaacagg acccgggaca 150

gaggaaccat ggctccgcag aacctgagca ccttttgcoct gttgctgcta 200
tacctcatcg gggcggtgat tgccggacga gattttctata agatcttggg 250
ggtgcctcga agtgcctcta taaaggatat taaaaaggcc tataggaaac 300
tagccctgca gcttcatccc gaccggaacc ctgatgatcc acaagcccag 350
gagaaattcc aggatctggg tgctgcttat gaggttctgt cagatagtga 400
gaaacggaaa cagtacgata cttatggtga agaaggatta aaagatggtc 450
atcagagctc ccatggagac attttttcac acttctttgg ggattttggt 500
ttcatgtttg gaggaacccc tcgtcagcaa gacagaaata ttccaagagg 550
aagtgatatt attgtagatc tagaagtcac tttggaagaa gtatatgcag 600
gaaattttgt ggaagtagtt agaaacaaac ctgtggcaag gcaggctcct 650
ggcaaacgga agtgcaattg tcggcaagag atgcggacca cccagctggg 700
ccctgggcgc ttocaaatga cccaggagggt ggtctgcgac gaatgcccta 750
atgtcaaact agtgaatgaa gaacgaacgc tggaagtaga aatagagcct 800
ggggtgagag acggcatgga gtaccctttt attggagaag gtgagcctca 850
cgtggatggg gagcctggag atttacgggt ccgaatcaaa gttgtcaagc 900
accaatatt tgaaaggaga ggagatgatt tgtacacaaa tgtgacaatc 950
tcattagttg agtcaactgg tggttttgag atggatatta ctcaacttga 1000
tggtcacaag gtacatattt cccgggataa gatcaccagg ccaggagcga 1050
agctatggaa gaaaggggaa gggctccoca actttgacaa caacaatatc 1100
aagggtcttt tgataatcac ttttgatgtg gattttccaa aagaacagtt 1150
aacagaggaa gcgagagaag gtatcaaaca gctactgaaa caagggtcag 1200
tgcagaaggt atacaatgga ctgcaaggat attgagagtg aataaaattg 1250
gactttgttt aaaataagtg aataagcgat atttattatc tgcaagggtt 1300
ttttgtgtgt gttttgttt ttattttcaa tatgcaagtt aggcttaatt 1350
tttttatcta atgatcatca tgaaatgaat aagagggtt aagaatttgt 1400
ccatttgcat tcggaaaaga atgaccagca aaagggtttac taatacctct 1450
ccctttgggg atttaatgtc tgggtctgcc gcctgagttt caagaattaa 1500
agctgcaaga ggactccagg agcaaaagaa acacaatata gagggttgga 1550
gttgtagca atttcattca aaatgccaac tggagaagtc tgtttttaaa 1600
tacattttgt tgttattttt a 1621

<210> 148
<211> 358
<212> PRT

<213> Homo sapiens

<400> 148

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Gln | Asn | Leu | Ser | Thr | Phe | Cys | Leu | Leu | Leu | Leu | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Ile | Gly | Ala | Val | Ile | Ala | Gly | Arg | Asp | Phe | Tyr | Lys | Ile | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Val | Pro | Arg | Ser | Ala | Ser | Ile | Lys | Asp | Ile | Lys | Lys | Ala | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Lys | Leu | Ala | Leu | Gln | Leu | His | Pro | Asp | Arg | Asn | Pro | Asp | Asp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Gln | Ala | Gln | Glu | Lys | Phe | Gln | Asp | Leu | Gly | Ala | Ala | Tyr | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Leu | Ser | Asp | Ser | Glu | Lys | Arg | Lys | Gln | Tyr | Asp | Thr | Tyr | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Glu | Gly | Leu | Lys | Asp | Gly | His | Gln | Ser | Ser | His | Gly | Asp | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Ser | His | Phe | Phe | Gly | Asp | Phe | Gly | Phe | Met | Phe | Gly | Gly | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Pro | Arg | Gln | Gln | Asp | Arg | Asn | Ile | Pro | Arg | Gly | Ser | Asp | Ile | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Asp | Leu | Glu | Val | Thr | Leu | Glu | Glu | Val | Tyr | Ala | Gly | Asn | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Val | Glu | Val | Val | Arg | Asn | Lys | Pro | Val | Ala | Arg | Gln | Ala | Pro | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Arg | Lys | Cys | Asn | Cys | Arg | Gln | Glu | Met | Arg | Thr | Thr | Gln | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Pro | Gly | Arg | Phe | Gln | Met | Thr | Gln | Glu | Val | Val | Cys | Asp | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Cys | Pro | Asn | Val | Lys | Leu | Val | Asn | Glu | Glu | Arg | Thr | Leu | Glu | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Glu | Ile | Glu | Pro | Gly | Val | Arg | Asp | Gly | Met | Glu | Tyr | Pro | Phe | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Glu | Gly | Glu | Pro | His | Val | Asp | Gly | Glu | Pro | Gly | Asp | Leu | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Arg | Ile | Lys | Val | Val | Lys | His | Pro | Ile | Phe | Glu | Arg | Arg | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Asp | Leu | Tyr | Thr | Asn | Val | Thr | Ile | Ser | Leu | Val | Glu | Ser | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Gly | Phe | Glu | Met | Asp | Ile | Thr | His | Leu | Asp | Gly | His | Lys | Val |
| | | | | 275 | | | | | 280 | | | | | 285 |
| His | Ile | Ser | Arg | Asp | Lys | Ile | Thr | Arg | Pro | Gly | Ala | Lys | Leu | Trp |
| | | | | 290 | | | | | 295 | | | | | 300 |

Lys Lys Gly Glu Gly Leu Pro Asn Phe Asp Asn Asn Asn Ile Lys
305 310 315

Gly Ser Leu Ile Ile Thr Phe Asp Val Asp Phe Pro Lys Glu Gln
320 325 330

Leu Thr Glu Glu Ala Arg Glu Gly Ile Lys Gln Leu Leu Lys Gln
335 340 345

Gly Ser Val Gln Lys Val Tyr Asn Gly Leu Gln Gly Tyr
350 355

<210> 149
<211> 509
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 34, 52, 134, 142, 155, 158, 196, 217, 228, 272, 347, 410, 445,
482
<223> unknown base

<400> 149
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gntgcgaccg aagcggcggtg cggaggaggt tttgaggatt tttggaacag 100
gacccggaca gaggaaccat ggttccgcag aacntgagca cnttttgcct 150
gttgntgnta tacttcatcg gggcgggtgat tgccggacga gatttntata 200
agattttggg gtgcctngaa gtgccttnta taaaggatat taaaaaggcc 250
tataggaaac tagccctgca gntttatccc gaccggaacc ctgatgatcc 300
acaagccag gagaaattcc aggatttggg tgctgcttat gaggttntgt 350
cagatagtga gaaacggaaa cagtacgata attatggtga agaaggatta 400
aaagatggtn atcagagctc ccatggagac attttttcac acttnttttg 450
ggattttggt ttcattgttg gaggaacccc tngtcagcaa gacagaaata 500
ttccaagag 509

<210> 150
<211> 1532
<212> DNA
<213> Homo sapiens

<400> 150
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aggccctcag gtctctgcag gtgtcgtgga ggaacctagc acctgccatc 100
ctcttcccca atttgccact tccagcagct ttagcccatg aggaggatgt 150
gaccgggact gagtcaggag ccctctggaa gcatggagac tgtggtgatt 200
gttgccatag gtgtgctggc caccatcttt ctggcttcgt ttgcagcctt 250
ggtgctggtt tgcaggcagc gctactgccg gccgcgagac ctgctgcagc 300

gctatgattc taagcccatt gtggacctca ttggtgccat ggagacccag 350
tctgagccct ctgagttaga actggacgat gtcgttatca ccaaccccc 400
cattgaggcc attctggaga atgaagactg gatcgaagat gcctcgggtc 450
tcatgtccca ctgcattgcc atcttgaaga tttgtcacac tctgacagag 500
aagcttggtg ccatgacaat gggctctggg gccaagatga agacttcagc 550
cagtgtcagc gacatcattg tgggtggcaa gcggatcagc cccagggtgg 600
atgatgttgt gaagtcgatg taccctccgt tggaccccaa actcctggac 650
gcacggacga ctgccctgct cctgtctgtc agtcacctgg tgctgggtgac 700
aaggaatgcc tgccatctga cgggaggcct ggactggatt gaccagtctc 750
tgtcggctgc tgaggagcat ttggaagtcc ttcgagaagc agccctagct 800
tctgagccag ataaaggcct cccaggccct gaaggcttcc tgcaggagca 850
gtctgcaatt tagtgcctac aggccagcag ctagccatga aggccctgc 900
cgccatccct ggatggctca gcttagcctt ctactttttc ctatagagtt 950
agttgtttct caccggtgga gagttcagct gtgtgtgcat agtaaagcag 1000
gagatccccg tcagtttatg cctcttttgc agttgcaaac tgtggctggt 1050
gagtggcagt ctaatactac agttagggga gatgccattc actctctgca 1100
agaggagtat tgaaaactgg tggactgtca gctttattta gctcacctag 1150
tgttttcaag aaaattgagc caccgtctaa gaaatcaaga ggtttcacat 1200
taaaattaga atttctggcc tctctcgatc ggtcagaatg tgtggcaatt 1250
ctgatctgca ttttcagaag aggacaatca attgaaacta agtaggggtt 1300
tcttcttttg gcaagacttg tactctctca cctggcctgt ttcatttatt 1350
tgtattatct gcctgggtccc tgaggcgtct gggctctctcc tctcccttgc 1400
aggtttgggt ttgaagctga ggaactacaa agttgatgat ttctttttta 1450
tctttatgcc tgcaatttta cctagctacc actaggtgga tagtaaattt 1500
atacttatgt ttccctcaaa aaaaaaaaaa aa 1532

<210> 151

<211> 226

<212> PRT

<213> Homo sapiens

<400> 151

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Thr | Val | Val | Ile | Val | Ala | Ile | Gly | Val | Leu | Ala | Thr | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Ala | Ser | Phe | Ala | Ala | Leu | Val | Leu | Val | Cys | Arg | Gln | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Cys | Arg | Pro | Arg | Asp | Leu | Leu | Gln | Arg | Tyr | Asp | Ser | Lys | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

attttagtc cttattggtt ggcctttgat aggcattgat ttcgaaattt 350
 atggattttt tctcttggtc aggggcttct ttctgtcgt tgttggtttt 400
 attagaagag tgccagtcct tggatccctc ctaaatttac ctggaattag 450
 atcatttgta gataaagttg gagaaagcaa caatatggta taacaacaag 500
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 agaattttca gcacaaaatt aaattacatg aaatagcttg taatgttctt 600
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 ttagagaact gtggtgcctg tttcttttct ttttattttg aaggctcagg 850
 agcatccata ggcatttgct ttttagaagt gtccactgca atggcaaaaa 900
 tatttccagt tgcactgtat ctctggaagt gatgcatgaa ttcgattgga 950
 ttgtgtcatt ttaaagtatt aaaaccaagg aaacccaat tttgatgtat 1000
 ggattacttt tttttgngcn cagggcc 1027

<210> 153
 <211> 138
 <212> PRT
 <213> Homo sapiens

<220>
 <221> N-myristoylation Sites
 <222> 11-16, 51-56 and 116-121
 <223> N-myristoylation Sites.

<220>
 <221> Transmembrane domains
 <222> 12-30, 33-52, 69-89 and 93-109
 <223> Transmembrane domains

<220>
 <221> Aminoacyl-transfer RNA Synthetases.
 <222> 49-59
 <223> Aminoacyl-transfer RNA synthetases class-II protein.

<400> 153
 Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr
 1 5 10 15
 Gly Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe
 20 25 30
 Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly
 35 40 45
 Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe
 50 55 60

Gln Lys His Lys Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val
65 70 75
Phe Val Val Leu Ile Gly Trp Pro Leu Ile Gly Met Ile Phe Glu
80 85 90
Ile Tyr Gly Phe Phe Leu Leu Phe Arg Gly Phe Phe Pro Val Val
95 100 105
Val Gly Phe Ile Arg Arg Val Pro Val Leu Gly Ser Leu Leu Asn
110 115 120
Leu Pro Gly Ile Arg Ser Phe Val Asp Lys Val Gly Glu Ser Asn
125 130 135
Asn Met Val

<210> 154
<211> 405
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 66
<223> unknown base

<400> 154
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ccactgcagc catgatctcc ttaacggaca cgcagaaaat tggaatggga 150
ttaaccggat ttggagtgtt tttctgttc tttggaatga ttctcttttt 200
tgacaaagca ctactggcta ttggaaatgt tttatttgta gccggcttgg 250
cttttgtaat tggtttagaa agaacattca gattcttctt ccaaaaacat 300
aaaatgaaag ctacagggtt ttttctgggt ggtgtatttg tagtccttat 350
tggttggcct ttgataggca tgatcttcga aatttatgga ttttttctct 400
tgttc 405

<210> 155
<211> 1781
<212> DNA
<213> Homo sapiens

<400> 155
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tttcttcctt ctggaaatct ttgactgtgg gtagttattt atttctgaat 150
aagagcgtcc acgcatcatg gacctcgcg gactgctgaa gtctcagttc 200
ctgtgccacc tgggtcttct ctacgtcttt attgcctcag ggctaatacat 250

caacaccatt cagctcttca ctctcctcct ctggcccatt aacaagcagc 300
 tcttccggaa gatcaactgc agactgtcct attgcatctc aagccagctg 350
 gtgatgctgc tggagtgggtg gtcgggcacg gaatgcacca tcttcacgga 400
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 cgcgcaagtg ggagcaggat cgcaagacgg ttgccaccag tttgcagcac 650
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 acggttcacg gagaagaagc atgagatcag catgcagggtg gcccgggcca 750
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 gccatcaccg tgaggagctt gagaaatgta gtttcagctg tatatgactg 850
 tacactcaat ttcagaaata atgaaaatcc aacactgctg ggagtcttaa 900
 acggaaagaa ataccatgca gatttgtatg ttaggaggat cccactggaa 950
 gacatccctg aagacgatga cgagtgtctg gcctggctgc acaagctcta 1000
 ccaggagaag gatgcctttc aggaggagta ctacaggacg ggcaccttc 1050
 cagagacgcc catggtgccc ccccggcggc cctggaccct cgtgaactgg 1100
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 gctgcagggg agggcagggc tggggaccga aggggacaag ttcccccttc 1650
 atcctttggt gctgagtttt ctgtaaccct tggttgccag agataaagtg 1700
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<210> 156

| | | | | | |
|-----------------|---------------------|---------------------|-----|-----|-----|
| | 290 | | 295 | | 300 |
| Pro Pro Arg Arg | Pro Trp Thr Leu Val | Asn Trp Leu Phe Trp | Ala | | |
| | 305 | 310 | | 315 | |
| Ser Leu Val Leu | Tyr Pro Phe Phe Gln | Phe Leu Val Ser Met | Ile | | |
| | 320 | 325 | | 330 | |
| Arg Ser Gly Ser | Ser Leu Thr Leu Ala | Ser Phe Ile Leu Val | Phe | | |
| | 335 | 340 | | 345 | |
| Phe Val Ala Ser | Val Gly Val Arg Trp | Met Ile Gly Val Thr | Glu | | |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ser | Asp | Gln | Ile | Met | Thr | Phe | Arg | Glu | Arg | Leu | Leu | His | Lys | Asn | |
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| Leu | Gln | Glu | His | Phe | Ser | Asn | Gln | Asp | Leu | Val | Phe | Leu | Leu | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Pro | Ser | Ile | Ile | Thr | Glu | Ser | Cys | Ser | Thr | His | Arg | Leu | Glu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Ser | Leu | Tyr | Lys | Pro | Gln | Lys | Gly | Leu | Phe | His | Arg | Val | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Val | Ala | Asn | Leu | Gly | Met | Ser | Glu | Gln | Leu | Gly | Tyr | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Thr | Val | Ser | Gly | Ser | Cys | Met | Ser | Thr | Gly | Phe | Ser | Arg | Ala | Val | |
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| | | | | 230 | | | | | 235 | | | | | 240 | |
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| Gln | Lys | Asp | Pro | Gln | Glu | Asn | Ile | Phe | Leu | Cys | Gln | Ala | Leu | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Thr | Phe | Phe | Pro | Asn | Ser | Glu | Phe | Leu | His | Ser | Cys | Val | Met | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Lys | Asn | Arg | His | Val | Ser | Lys | Ser | Ser | Cys | Asn | Tyr | Asn | His | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| His | Leu | Asp | Val | Val | Asp | Asn | Leu | Thr | Leu | Met | Val | Glu | His | Thr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asp | Ile | Pro | Glu | Ala | Ser | Pro | Ala | Ser | Thr | Pro | Gln | Ile | Ile | Lys | |
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| Arg | Leu | Leu | Asp | Thr | Gln | Asp | Lys | Arg | Ser | Lys | Ala | Asn | Thr | Gly | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Ser | Asn | Gln | Asp | Lys | Ala | Ser | Lys | Met | Ser | Ser | Pro | Glu | Thr | |
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| Asp | Glu | Glu | Ile | Glu | Lys | Met | Lys | Gly | Phe | Gly | Glu | Tyr | Ser | Arg | |
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| Ser | Pro | Thr | Phe | | | | | | | | | | | | |

BOOK REVIEW

BOOK REVIEW

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| 20 | | 25 | 30 |
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| Gly Gly Gln Glu Cys Glu Cys Lys Asp Trp Phe Leu Arg Ala Pro | | | |
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| Arg Arg Lys Phe Met Thr Val Ser Gly Leu Pro Lys Lys Gln Cys | | | |
| 65 | | 70 | 75 |
| Pro Cys Asp His Phe Lys Gly Asn Val Lys Lys Thr Arg His Gln | | | |
| 80 | | 85 | 90 |
| Arg His His Arg Lys Pro Asn Lys His Ser Arg Ala Cys Gln Gln | | | |
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|---------------------------------|------|
| 1. Luther, Martin (1483-1521) | 1521 |
| 2. Luther, Martin (1521-1530) | 1530 |
| 3. Luther, Martin (1530-1535) | 1535 |
| 4. Luther, Martin (1535-1540) | 1540 |
| 5. Luther, Martin (1540-1545) | 1545 |
| 6. Luther, Martin (1545-1550) | 1550 |
| 7. Luther, Martin (1550-1555) | 1555 |
| 8. Luther, Martin (1555-1560) | 1560 |
| 9. Luther, Martin (1560-1565) | 1565 |
| 10. Luther, Martin (1565-1570) | 1570 |
| 11. Luther, Martin (1570-1575) | 1575 |
| 12. Luther, Martin (1575-1580) | 1580 |
| 13. Luther, Martin (1580-1585) | 1585 |
| 14. Luther, Martin (1585-1590) | 1590 |
| 15. Luther, Martin (1590-1595) | 1595 |
| 16. Luther, Martin (1595-1600) | 1600 |
| 17. Luther, Martin (1600-1605) | 1605 |
| 18. Luther, Martin (1605-1610) | 1610 |
| 19. Luther, Martin (1610-1615) | 1615 |
| 20. Luther, Martin (1615-1620) | 1620 |
| 21. Luther, Martin (1620-1625) | 1625 |
| 22. Luther, Martin (1625-1630) | 1630 |
| 23. Luther, Martin (1630-1635) | 1635 |
| 24. Luther, Martin (1635-1640) | 1640 |
| 25. Luther, Martin (1640-1645) | 1645 |
| 26. Luther, Martin (1645-1650) | 1650 |
| 27. Luther, Martin (1650-1655) | 1655 |
| 28. Luther, Martin (1655-1660) | 1660 |
| 29. Luther, Martin (1660-1665) | 1665 |
| 30. Luther, Martin (1665-1670) | 1670 |
| 31. Luther, Martin (1670-1675) | 1675 |
| 32. Luther, Martin (1675-1680) | 1680 |
| 33. Luther, Martin (1680-1685) | 1685 |
| 34. Luther, Martin (1685-1690) | 1690 |
| 35. Luther, Martin (1690-1695) | 1695 |
| 36. Luther, Martin (1695-1700) | 1700 |
| 37. Luther, Martin (1700-1705) | 1705 |
| 38. Luther, Martin (1705-1710) | 1710 |
| 39. Luther, Martin (1710-1715) | 1715 |
| 40. Luther, Martin (1715-1720) | 1720 |
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| 43. Luther, Martin (1730-1735) | 1735 |
| 44. Luther, Martin (1735-1740) | 1740 |
| 45. Luther, Martin (1740-1745) | 1745 |
| 46. Luther, Martin (1745-1750) | 1750 |
| 47. Luther, Martin (1750-1755) | 1755 |
| 48. Luther, Martin (1755-1760) | 1760 |
| 49. Luther, Martin (1760-1765) | 1765 |
| 50. Luther, Martin (1765-1770) | 1770 |
| 51. Luther, Martin (1770-1775) | 1775 |
| 52. Luther, Martin (1775-1780) | 1780 |
| 53. Luther, Martin (1780-1785) | 1785 |
| 54. Luther, Martin (1785-1790) | 1790 |
| 55. Luther, Martin (1790-1795) | 1795 |
| 56. Luther, Martin (1795-1800) | 1800 |
| 57. Luther, Martin (1800-1805) | 1805 |
| 58. Luther, Martin (1805-1810) | 1810 |
| 59. Luther, Martin (1810-1815) | 1815 |
| 60. Luther, Martin (1815-1820) | 1820 |
| 61. Luther, Martin (1820-1825) | 1825 |
| 62. Luther, Martin (1825-1830) | 1830 |
| 63. Luther, Martin (1830-1835) | 1835 |
| 64. Luther, Martin (1835-1840) | 1840 |
| 65. Luther, Martin (1840-1845) | 1845 |
| 66. Luther, Martin (1845-1850) | 1850 |
| 67. Luther, Martin (1850-1855) | 1855 |
| 68. Luther, Martin (1855-1860) | 1860 |
| 69. Luther, Martin (1860-1865) | 1865 |
| 70. Luther, Martin (1865-1870) | 1870 |
| 71. Luther, Martin (1870-1875) | 1875 |
| 72. Luther, Martin (1875-1880) | 1880 |
| 73. Luther, Martin (1880-1885) | 1885 |
| 74. Luther, Martin (1885-1890) | 1890 |
| 75. Luther, Martin (1890-1895) | 1895 |
| 76. Luther, Martin (1895-1900) | 1900 |
| 77. Luther, Martin (1900-1905) | 1905 |
| 78. Luther, Martin (1905-1910) | 1910 |
| 79. Luther, Martin (1910-1915) | 1915 |
| 80. Luther, Martin (1915-1920) | 1920 |
| 81. Luther, Martin (1920-1925) | 1925 |
| 82. Luther, Martin (1925-1930) | 1930 |
| 83. Luther, Martin (1930-1935) | 1935 |
| 84. Luther, Martin (1935-1940) | 1940 |
| 85. Luther, Martin (1940-1945) | 1945 |
| 86. Luther, Martin (1945-1950) | 1950 |
| 87. Luther, Martin (1950-1955) | 1955 |
| 88. Luther, Martin (1955-1960) | 1960 |
| 89. Luther, Martin (1960-1965) | 1965 |
| 90. Luther, Martin (1965-1970) | 1970 |
| 91. Luther, Martin (1970-1975) | 1975 |
| 92. Luther, Martin (1975-1980) | 1980 |
| 93. Luther, Martin (1980-1985) | 1985 |
| 94. Luther, Martin (1985-1990) | 1990 |
| 95. Luther, Martin (1990-1995) | 1995 |
| 96. Luther, Martin (1995-2000) | 2000 |
| 97. Luther, Martin (2000-2005) | 2005 |
| 98. Luther, Martin (2005-2010) | 2010 |
| 99. Luther, Martin (2010-2015) | 2015 |
| 100. Luther, Martin (2015-2020) | 2020 |

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| Thr | Leu | Pro | Leu | His 20 | Leu | Met | Ala | Leu | Leu 25 | Gly | Cys | Trp | Gln | Pro 30 |
| Leu | Cys | Lys | Ser | Tyr 35 | Phe | Pro | Tyr | Leu | Met 40 | Ala | Val | Leu | Thr | Pro 45 |
| Lys | Ser | Asn | Arg | Lys 50 | Met | Glu | Ser | Lys | Lys 55 | Arg | Glu | Leu | Phe | Ser 60 |
| Gln | Ile | Lys | Gly | Leu 65 | Thr | Gly | Ala | Ser | Gly 70 | Lys | Val | Ala | Leu | Leu 75 |
| Glu | Leu | Gly | Cys | Gly 80 | Thr | Gly | Ala | Asn | Phe 85 | Gln | Phe | Tyr | Pro | Pro 90 |
| Gly | Cys | Arg | Val | Thr 95 | Cys | Leu | Asp | Pro | Asn 100 | Pro | His | Phe | Glu | Lys 105 |
| Phe | Leu | Thr | Lys | Ser 110 | Met | Ala | Glu | Asn | Arg 115 | His | Leu | Gln | Tyr | Glu 120 |
| Arg | Phe | Val | Val | Ala 125 | Pro | Gly | Glu | Asp | Met 130 | Arg | Gln | Leu | Ala | Asp 135 |
| Gly | Ser | Met | Asp | Val 140 | Val | Val | Cys | Thr | Leu 145 | Val | Leu | Cys | Ser | Val 150 |
| Gln | Ser | Pro | Arg | Lys 155 | Val | Leu | Gln | Glu | Val 160 | Arg | Arg | Val | Leu | Arg 165 |
| Pro | Gly | Gly | Val | Leu 170 | Phe | Phe | Trp | Glu | His 175 | Val | Ala | Glu | Pro | Tyr 180 |
| Gly | Ser | Trp | Ala | Phe 185 | Met | Trp | Gln | Gln | Val 190 | Phe | Glu | Pro | Thr | Trp 195 |
| Lys | His | Ile | Gly | Asp 200 | Gly | Cys | Cys | Leu | Thr 205 | Arg | Glu | Thr | Trp | Lys 210 |
| Asp | Leu | Glu | Asn | Ala 215 | Gln | Phe | Ser | Glu | Ile 220 | Gln | Met | Glu | Arg | Gln 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Pro | Leu | Lys | Trp | Leu | Pro | Val | Gly | Pro | His | Ile | Met | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ala | Val | Lys | Gln | Ser | Phe | Pro | Ser | Ser | Lys | Ala | Leu | Ile | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ser | Phe | Pro | Ser | Leu | Gln | Leu | Glu | Gln | Ala | Thr | His | Gln | Pro | Ile |
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35 40 45
Gln Pro Ile Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp
50 55 60
Gly Arg Gln Glu Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp
65 70 75
Arg Leu Gly Gly Ala Ile Ala Ala Ile Asn Ser Ile Gln His Asn
80 85 90
Thr Arg Ser Asn Val Ile Phe Tyr Ile Val Thr Leu Asn Asn Thr
95 100 105
Ala Asp His Leu Arg Ser Trp Leu Asn Ser Asp Ser Leu Lys Ser
110 115 120
Ile Arg Tyr Lys Ile Val Asn Phe Asp Pro Lys Leu Leu Glu Gly
125 130 135
Lys Val Lys Glu Asp Pro Asp Gln Gly Glu Ser Met Lys Pro Leu
140 145 150
Thr Phe Ala Arg Phe Tyr Leu Pro Ile Leu Val Pro Ser Ala Lys
155 160 165
Lys Ala Ile Tyr Met Asp Asp Asp Val Ile Val Gln Gly Asp Ile
170 175 180
Leu Ala Leu Tyr Asn Thr Ala Leu Lys Pro Gly His Ala Ala Ala

| 185 | | | | | | | | | | 190 | | | | | 195 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Phe | Ser | Glu | Asp | Cys | Asp | Ser | Ala | Ser | Thr | Lys | Val | Val | Ile | Arg | | | | | |
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| Gly | Ala | Gly | Asn | Gln | Tyr | Asn | Tyr | Ile | Gly | Tyr | Leu | Asp | Tyr | Lys | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Lys | Glu | Arg | Ile | Arg | Lys | Leu | Ser | Met | Lys | Ala | Ser | Thr | Cys | Ser | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Asn | Pro | Gly | Val | Phe | Val | Ala | Asn | Leu | Thr | Glu | Trp | Lys | Arg | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Gln | Asn | Ile | Thr | Asn | Gln | Leu | Glu | Lys | Trp | Met | Lys | Leu | Asn | Val | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Glu | Glu | Gly | Leu | Tyr | Ser | Arg | Thr | Leu | Ala | Gly | Ser | Ile | Thr | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Pro | Pro | Leu | Leu | Ile | Val | Phe | Tyr | Gln | Gln | His | Ser | Thr | Ile | Asp | | | | | |
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| Gly | His | Leu | Lys | Pro | Trp | Gly | Arg | Thr | Ala | Ser | Tyr | Thr | Asp | Val | | | | | |
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| Trp | Glu | Lys | Trp | Tyr | Ile | Pro | Asp | Pro | Thr | Gly | Lys | Phe | Asn | Leu | | | | | |
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 <211> 445
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 Phe Val Cys Gly Val Leu Trp Trp Leu Tyr Tyr Asp Tyr Thr Asn
 50 55 60
 Asp Leu Ser Ile Glu Leu Asp Thr Glu Arg Glu Asn Met Lys Cys
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 80 85 90
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| Trp | Val | Leu | Trp | Val | Ala | Val | Leu | Leu | Ser | Leu | Gly | Thr | Ala | Gly | | | | | |
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| Ala | Ala | Gln | Val | Met | Glu | Gly | Gly | Gln | Val | Glu | Tyr | Lys | Pro | Leu | | | | | |
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| Ser | Gly | Ile | Arg | Tyr | Met | Trp | Ser | Tyr | His | Leu | Ile | Gly | Leu | Ile | | | | | |
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| Pro | Asp | His | Pro | Ile | Leu | Ser | Ser | Leu | Ser | Ile | Leu | Phe | Phe | Tyr | | | | | |
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| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Arg | Ile | Pro | Arg | Ile | Ile | Val | Met | Tyr | Met | Gln | Asn | Ala | Leu | Lys | | | | | |
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| Thr | Ser | Ala | Lys | Asp | Ala | Phe | Lys | Ile | Leu | Ser | Lys | Asn | Ser | Ser | | | | | |
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| His | Phe | Thr | Ser | Ile | Asn | Cys | Phe | Gly | Asp | Phe | Ile | Ile | Phe | Leu | | | | | |
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| Gly | Lys | Val | Leu | Val | Val | Cys | Phe | Thr | Val | Phe | Gly | Gly | Leu | Met | | | | | |
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| Ala | Phe | Asn | Tyr | Asn | Arg | Ala | Phe | Gln | Val | Trp | Ala | Val | Pro | Leu | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Leu | Leu | Val | Ala | Phe | Phe | Ala | Tyr | Leu | Val | Ala | His | Ser | Phe | Leu | | | | | |
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| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Val | Asp | Leu | Glu | Thr | Asn | Asp | Gly | Ser | Ser | Glu | Lys | Pro | Tyr | Phe | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
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| 635 | 640 | 645 |
| Asp His Ser Phe Phe Val Asp Glu Phe | Asp Asn Leu His Gln Tyr | |
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<211> 541

<212> PRT

<213> Homo sapiens

<400> 181

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| Leu | Pro | Gln | His | His | Gly | Ala | Pro | Gly | Pro | Asp | Gly | Ser | Ala | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Pro | Ala | His | Tyr | Ser | Phe | Ser | Leu | Thr | Leu | Ile | Asp | Ala | Leu |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asp | Thr | Leu | Leu | Ile | Leu | Gly | Asn | Val | Ser | Glu | Phe | Gln | Arg | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | Glu | Val | Leu | Gln | Asp | Ser | Val | Asp | Phe | Asp | Ile | Asp | Val | Asn |
| | | | 65 | | | | | | 70 | | | | | 75 |
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| | | | 80 | | | | | | 85 | | | | | 90 |
| Ser | Ala | His | Leu | Leu | Ser | Lys | Lys | Ala | Gly | Val | Glu | Val | Glu | Ala |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gly | Trp | Pro | Cys | Ser | Gly | Pro | Leu | Leu | Arg | Met | Ala | Glu | Glu | Ala |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Ala | Arg | Lys | Leu | Leu | Pro | Ala | Phe | Gln | Thr | Pro | Thr | Gly | Met | Pro |

| | | |
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| 470 | 475 | 480 |
| Asn Thr Val Ser Ser Gly Pro Trp Glu | Pro Pro Ala Arg Pro Gly | |
| 485 | 490 | 495 |
| Thr Leu Phe Ser Pro Glu Asn His Asp | Gln Ala Arg Glu Arg Lys | |
| 500 | 505 | 510 |
| Pro Ala Lys Gln Lys Val Pro Leu Leu | Ser Cys Pro Ser Gln Pro | |
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<210> 183

<211> 311

<212> PRT

<213> Homo sapiens

<220>

<221> Signal peptide

<222> 1-29

<223> Signal peptide

<220>

<221> N-glycosylation sites

<222> 40-43, 134-137

<223> N-glycosylation sites.

<220>

<221> Tissue factor proteins homology

<222> 92-119

<223> Tissue factor proteins homology

<220>

<221> Transmembrane domain

<222> 230-255

<223> Transmembrane domain

<220>

<221> Integrins alpha chain protein homology

<222> 232-262

<223> Integrins alpha chain protein homology

<400> 183

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| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Glu | Val | Ala | Ile | Leu | Pro | Ala | Pro | Gln | Asn | Leu | Ser | Val | Leu | Ser | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Asn | Met | Lys | His | Leu | Leu | Met | Trp | Ser | Pro | Val | Ile | Ala | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Glu | Thr | Val | Tyr | Tyr | Ser | Val | Glu | Tyr | Gln | Gly | Glu | Tyr | Glu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Leu | Tyr | Thr | Ser | His | Ile | Trp | Ile | Pro | Ser | Ser | Trp | Cys | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Thr | Glu | Gly | Pro | Glu | Cys | Asp | Val | Thr | Asp | Asp | Ile | Thr | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Thr | Val | Pro | Tyr | Asn | Leu | Arg | Val | Arg | Ala | Thr | Leu | Gly | Ser | Gln | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser | | | | | |
| | | | | 305 | | | | | 310 | | | | | | |

<210> 184
 <211> 808
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 654, 711, 748
 <223> unknown base

<400> 184
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 tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150
 agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200
 ccaaatgcag actttcaciaa tggttctaga agaaatctgg acaagtcttt 250
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 tggatcccca gcagctggtg ctactcact gaaggtcctg agtgtgatgt 500
 cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
 cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
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 ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
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 tgacccac 808

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<213> Artificial Sequence

<220>
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<400> 185
aggcttcgct gcgactagac ctc 23

<210> 186
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 186
ccaggtcggg taaggatggt tgag 24

<210> 187
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 187
tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 188
<211> 1227
<212> DNA
<213> Homo sapiens

<400> 188
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aggacttcta cgacttcaag gcggtcaaca tccggggcaa actggtgtcg 150
ctggagaagt accgcggatc ggtgtccctg gtggtgaatg tggccagcga 200
gtgcggcctt acagaccagc actaccgagc cctgcagcag ctgcagcgag 250
acctgggccc ccaccacttt aacgtgctcg ccttcccctg caaccagttt 300
ggccaacagg agcctgacag caacaaggag attgagagct ttgcccgcgc 350
cacctacagt gtctcattcc ccatgttttag caagattgca gtcaccggtg 400
ctggtgcca tcctgccttc aagtacctgg cccagacttc tgggaaggag 450
cccacctgga acttotggaa gtacctagta gcccagatg gaaagggtgg 500
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cagcgctcgt gaggaagctc atoctactga agcgagaaga cttataacca 600

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 tcctttactc ttatgccatt ggtcccatca ttcttgtggg ggaaaaattc 750
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 caataaaaac ttgcatccaa catgaatttc cagccgatga taatccaggc 1100
 caaaggttta gttgttgta tttcctctgt attattttct tcattacaaa 1150
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<210> 189
 <211> 187
 <212> PRT
 <213> Homo sapiens

<400> 189
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 20 25 30
 Val Asn Ile Arg Gly Lys Leu Val Ser Leu Glu Lys Tyr Arg Gly
 35 40 45
 Ser Val Ser Leu Val Val Asn Val Ala Ser Glu Cys Gly Phe Thr
 50 55 60
 Asp Gln His Tyr Arg Ala Leu Gln Gln Leu Gln Arg Asp Leu Gly
 65 70 75
 Pro His His Phe Asn Val Leu Ala Phe Pro Cys Asn Gln Phe Gly
 80 85 90
 Gln Gln Glu Pro Asp Ser Asn Lys Glu Ile Glu Ser Phe Ala Arg
 95 100 105
 Arg Thr Tyr Ser Val Ser Phe Pro Met Phe Ser Lys Ile Ala Val
 110 115 120
 Thr Gly Thr Gly Ala His Pro Ala Phe Lys Tyr Leu Ala Gln Thr
 125 130 135
 Ser Gly Lys Glu Pro Thr Trp Asn Phe Trp Lys Tyr Leu Val Ala
 140 145 150
 Pro Asp Gly Lys Val Val Gly Ala Trp Asp Pro Thr Val Ser Val

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Glu Glu Val Arg Pro Gln Ile Thr Ala Leu Val Arg Lys Leu Ile
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Leu Leu Lys Arg Glu Asp Leu
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<210> 190
<211> 24
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<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 190
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<210> 191
<211> 24
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 191
agtctgggcc aggtacttga aggc 24
<210> 192
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 192
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<210> 193
<211> 2187
<212> DNA
<213> Homo sapiens
<400> 193
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ctggggggccc gggccgccct ctctcgaggt tggcaggaag ccagggttga 150
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ccatcgagag cctcagctac gttcaggggt gcaccaaaaa gcatcttaac 250
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acgagaggcc ttggtcgtcc tccatgaaga cgtcagggtg acctttgccc 350
aactcaagga ggaggtggac aaagctgctt ctggcctcct gagcattggc 400
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ctctgcaaag gtgaccggct gggcatgtgg ggacctaact cctatgcatg 450
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 agtgaaacac gcccggggag ctgtgcatcc gaggggtactg cgtcatgctg 1450
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ccctcctgtc catccccac attcccctgt ctgtccttgt gatttggcat 2150
aaagagcttc tgttttcttt gaaaaaaaaa aaaaaaa 2187

<210> 194
<211> 615
<212> PRT
<213> Homo sapiens

<400> 194
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Gly Ser Ser Gly Val Leu Gly Ala Arg Ala Ala Leu Ser Arg Ser
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Trp Gln Glu Ala Arg Leu Gln Gly Val Arg Phe Leu Ser Ser Arg
35 40 45
Glu Val Asp Arg Met Val Ser Thr Pro Ile Gly Gly Leu Ser Tyr
50 55 60
Val Gln Gly Cys Thr Lys Lys His Leu Asn Ser Lys Thr Val Gly
65 70 75
Gln Cys Leu Glu Thr Thr Ala Gln Arg Val Pro Glu Arg Glu Ala
80 85 90
Leu Val Val Leu His Glu Asp Val Arg Leu Thr Phe Ala Gln Leu
95 100 105
Lys Glu Glu Val Asp Lys Ala Ala Ser Gly Leu Leu Ser Ile Gly
110 115 120
Leu Cys Lys Gly Asp Arg Leu Gly Met Trp Gly Pro Asn Ser Tyr
125 130 135
Ala Trp Val Leu Met Gln Leu Ala Thr Ala Gln Ala Gly Ile Ile
140 145 150
Leu Val Ser Val Asn Pro Ala Tyr Gln Ala Met Glu Leu Glu Tyr
155 160 165
Val Leu Lys Lys Val Gly Cys Lys Ala Leu Val Phe Pro Lys Gln
170 175 180
Phe Lys Thr Gln Gln Tyr Tyr Asn Val Leu Lys Gln Ile Cys Pro
185 190 195
Glu Val Glu Asn Ala Gln Pro Gly Ala Leu Lys Ser Gln Arg Leu
200 205 210
Pro Asp Leu Thr Thr Val Ile Ser Val Asp Ala Pro Leu Pro Gly
215 220 225
Thr Leu Leu Leu Asp Glu Val Val Ala Ala Gly Ser Thr Arg Gln
230 235 240
His Leu Asp Gln Leu Gln Tyr Asn Gln Gln Phe Leu Ser Cys His

| | | |
|---|-----|-----|
| 560 | 565 | 570 |
| Ala Phe Cys Lys Gly Lys Ile Ser His Phe Lys Ile Pro Lys Tyr | | |
| 575 | 580 | 585 |
| Ile Val Phe Val Thr Asn Tyr Pro Leu Thr Ile Ser Gly Lys Ile | | |
| 590 | 595 | 600 |
| Gln Lys Phe Lys Leu Arg Glu Gln Met Glu Arg His Leu Asn Leu | | |
| 605 | 610 | 615 |

<210> 195
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 195
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 agcagttgcg gatgatcctg cccaaccccc tgtaccattg cctgggttcc 100
 gtggcaggca caatgatgtg tctgatgtac ggtgccaccc tcatcctggc 150
 ctctcccatc ttcaatggca agaaggcact ggaggccatc agcagagaga 200
 gaggcacctt cctgtatggt acccccacga tggtcgtgga cattctgaac 250
 cagccagact tctccagtta tgacatctcg accatgtgtg gaggtgtcat 300
 tgctgggtcc cctgcacctc cagagttgat ccgagccatc atcaacaaga 350
 taaatatgaa ggacctggtg gttgcttatg gaaccacaga gaacagtccc 400
 gtgacattcg cgcacttccc tgaggacact gtggagcaga aggcagaaaag 450
 cgtgggcaga attatgcctc acacggaggc gcggatcatg aacatggagg 500
 cagggacgct ggcaaagctg aacacgcccg gggagctgtg catccgaggg 550
 tactgcgtca tgctgggcta ctggggtgag cctcagaaga cagaggaagc 600
 agtggatcag gacaagtggg attggacagg agatgtcgcc ac 642

<210> 196
 <211> 1575
 <212> DNA
 <213> Homo sapiens

<400> 196
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 aggccctgga gtgctacagc tgcgtgcaga aagcagatga cggatgctcc 150
 ccgaacaaga tgaagacagt gaagtgcgcg ccgggctgtg acgtctgcac 200
 cgaggccgtg ggggctgggtg agaccatcca cggacaattc tcgctggcag 250
 tgccggggttg cggttcggga ctccccggca agaataaccg cggcctggat 300
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gatgaattct gcaactcgga tggagtaaca ggcccagggt tcacgctcag 650
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ccaattogcc ctatagttag tcgta 1575

<210> 197
<211> 346
<212> PRT
<213> Homo sapiens

<400> 197
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20 25 30
Leu Glu Cys Tyr Ser Cys Val Gln Lys Ala Asp Asp Gly Cys Ser

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aacgagagt ggaactcaac ccagatcccg cccctcctgt cctctgtgtt 1550
cccgcggaac ccaaccaaac cgtgcgctgt gacccattgc tgttctctgt 1600
atcgtgatct atcctcaaca acaacagaaa aaaggaataa aatatacctt 1650
gtttcct 1657

<210> 199
<211> 120
<212> PRT
<213> Homo sapiens

<400> 199
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20 25 30
His Tyr Asp Tyr Gln Thr Leu Arg Ile Gly Gly Leu Val Phe Ala
35 40 45
Val Val Leu Phe Ser Val Gly Ile Leu Leu Ile Leu Ser Arg Arg
50 55 60
Cys Lys Cys Ser Phe Asn Gln Lys Pro Arg Ala Pro Gly Asp Glu
65 70 75
Glu Ala Gln Val Glu Asn Leu Ile Thr Ala Asn Ala Thr Glu Pro
80 85 90
Gln Lys Gln Arg Thr Glu Val Gln Pro Ser Gly Gly Ser Leu Trp
95 100 105
Asn Leu Arg Arg Leu Leu Glu Pro Leu Asp Ala Asn Val Asp Ala
110 115 120

<210> 200
<211> 415
<212> DNA
<213> Homo sapiens

<400> 200
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aagaaagcac cattgagaat tatgcgtcac gacccgaggc ctttaacacc 150
ccgttcctga acatcgacaa attgcgatct gcgtttaagg ctgatgagtt 200
cctgaactgg cagccctct ttgagtctat caaaaggaaa cttcctttcc 250
tcaactggga tgcctttcct aagctgaaag gactgaggag cgcaactcct 300
gatgccagtg gaccatgacc tccactggaa gagggggcta gcgtgagcgc 350
tgattctcaa cctaccataa ctctttcctg cctcaggaac tccaataaaa 400

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<400> 201

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<210> 202
<211> 678
<212> DNA
<213> Homo sapiens
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<400> 202

177

<210> 203
 <211> 52
 <212> PRT
 <213> Homo sapiens

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 Ser Leu Leu Ala Ala Gly Val Ser Gln Val Val Leu Leu Gln Pro
 20 25 30
 Val Pro Thr Gln Glu Thr Gly Pro Lys Ala Met Gly Asp Leu Ser
 35 40 45
 Cys Gly Phe Ala Gly His Ser
 50

<210> 204
 <211> 1917
 <212> DNA
 <213> Homo sapiens

<400> 204
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 gcttcggctc tggctgctgt tgttcctcct gccctcagcg cagggccgcc 100
 agaaggagtc aggttcaaaa tggaaagtat ttattgacca aattaacagg 150
 tctttggaga attacgaacc atgttcaagt caaaactgca gctgctacca 200
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<213> Homo sapiens

<400> 208

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 <212> PRT
 <213> Homo sapiens

<400> 209
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 35 40 45
 Arg Val Asn Trp Met Tyr Phe Tyr Glu Tyr Glu Pro Ile Tyr Arg
 50 55 60
 Gln Asp Phe His Phe Thr Leu Arg Glu His Ser Asn Cys Ser His
 65 70 75
 Gln Asn Pro Phe Leu Val Ile Leu Val Thr Ser His Pro Ser Asp
 80 85 90
 Val Lys Ala Arg Gln Ala Ile Arg Val Thr Trp Gly Glu Lys Lys
 95 100 105
 Ser Trp Trp Gly Tyr Glu Val Leu Thr Phe Phe Leu Leu Gly Gln
 110 115 120
 Glu Ala Glu Lys Glu Asp Lys Met Leu Ala Leu Ser Leu Glu Asp
 125 130 135
 Glu His Leu Leu Tyr Gly Asp Ile Ile Arg Gln Asp Phe Leu Asp
 140 145 150
 Thr Tyr Asn Asn Leu Thr Leu Lys Thr Ile Met Ala Phe Arg Trp
 155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Thr | Glu | Phe | Cys | Pro | Asn | Ala | Lys | Tyr | Val | Met | Lys | Thr | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | Asp | Val | Phe | Ile | Asn | Thr | Gly | Asn | Leu | Val | Lys | Tyr | Leu | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asn | Leu | Asn | His | Ser | Glu | Lys | Phe | Phe | Thr | Gly | Tyr | Pro | Leu | Ile |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Asn | Tyr | Ser | Tyr | Arg | Gly | Phe | Tyr | Gln | Lys | Thr | His | Ile | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Tyr | Gln | Glu | Tyr | Pro | Phe | Lys | Val | Phe | Pro | Pro | Tyr | Cys | Ser | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Gly | Tyr | Ile | Met | Ser | Arg | Asp | Leu | Val | Pro | Arg | Ile | Tyr | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Met | Met | Gly | His | Val | Lys | Pro | Ile | Lys | Phe | Glu | Asp | Val | Tyr | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Ile | Cys | Leu | Asn | Leu | Leu | Lys | Val | Asn | Ile | His | Ile | Pro | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Asp | Thr | Asn | Leu | Phe | Phe | Leu | Tyr | Arg | Ile | His | Leu | Asp | Val | Cys |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gln | Leu | Arg | Arg | Val | Ile | Ala | Ala | His | Gly | Phe | Ser | Ser | Lys | Glu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ile | Ile | Thr | Phe | Trp | Gln | Val | Met | Leu | Arg | Asn | Thr | Thr | Cys | His |
| | | | | 320 | | | | | 325 | | | | | 330 |

Tyr

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 <211> 745
 <212> DNA
 <213> Homo sapiens

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<211> 185
<212> PRT
<213> Homo sapiens

<400> 211
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35 40 45
His Asn Val Ala Asn Val Asp Asn Asn Asn Gly Trp Asp Ser Trp
50 55 60
Asn Ser Ile Trp Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu
65 70 75
Phe Gln Lys Lys Thr Cys Ile Val His Lys Met Asn Lys Glu Val
80 85 90
Met Pro Ser Ile Gln Ser Leu Asp Ala Leu Val Lys Glu Lys Lys
95 100 105
Leu Gln Gly Lys Gly Pro Gly Gly Pro Pro Pro Lys Gly Leu Met
110 115 120
Tyr Ser Val Asn Pro Asn Lys Val Asp Asp Leu Ser Lys Phe Gly
125 130 135
Lys Asn Ile Ala Asn Met Cys Arg Gly Ile Pro Thr Tyr Met Ala
140 145 150
Glu Glu Met Gln Glu Ala Ser Leu Phe Phe Tyr Ser Gly Thr Cys
155 160 165
Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile Ser Phe Cys Gly
170 175 180
Asp Thr Val Glu Asn
185

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<211> 1706
<212> DNA
<213> Homo sapiens

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aaaagt 1706

<210> 213
<211> 299
<212> PRT
<213> Homo sapiens

<400> 213

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Asn | Asp | Ser | Leu | Arg | Thr | Asn | Val | Phe | Val | Arg | Phe | Gln | Pro | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Glu | Thr | Ile | Ala | Cys | Ala | Cys | Ile | Tyr | Leu | Ala | Ala | Arg | Ala | Leu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Gln | Ile | Pro | Leu | Pro | Thr | Arg | Pro | His | Trp | Phe | Leu | Leu | Phe | Gly | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Thr | Glu | Glu | Glu | Ile | Gln | Glu | Ile | Cys | Ile | Glu | Thr | Leu | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Tyr | Thr | Arg | Lys | Lys | Pro | Asn | Tyr | Glu | Leu | Leu | Glu | Lys | Glu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Glu | Lys | Arg | Lys | Val | Ala | Leu | Gln | Glu | Ala | Lys | Leu | Lys | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Lys | Gly | Leu | Asn | Pro | Asp | Gly | Thr | Pro | Ala | Leu | Ser | Thr | Leu | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Phe | Ser | Pro | Ala | Ser | Lys | Pro | Ser | Ser | Pro | Arg | Glu | Val | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ala | Glu | Glu | Lys | Ser | Pro | Ile | Ser | Ile | Asn | Val | Lys | Thr | Val | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Glu | Pro | Glu | Asp | Arg | Gln | Gln | Ala | Ser | Lys | Ser | Pro | Tyr | Asn | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Val | Arg | Lys | Asp | Ser | Lys | Arg | Ser | Arg | Asn | Ser | Arg | Ser | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | Arg | Ser | Arg | Ser | Arg | Thr | Arg | Ser | Arg | Ser | Arg | Ser | His | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Arg | Arg | His | Tyr | Asn | Asn | Arg | Arg | Ser | Arg | Ser | Gly | Thr | Tyr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Ser | Arg | Ser | Arg | Ser | Arg | Ser | Arg | Ser | His | Ser | Glu | Ser | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Arg | Arg | His | His | Asn | His | Gly | Ser | Pro | His | Leu | Lys | Ala | Lys | His | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Thr | Arg | Asp | Asp | Leu | Lys | Ser | Ser | Asn | Arg | His | Gly | His | Lys | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Lys | Lys | Ser | Arg | Ser | Arg | Ser | Gln | Ser | Lys | Ser | Arg | Asp | His | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asp | Ala | Ala | Lys | Lys | His | Arg | His | Glu | Arg | Gly | His | His | Arg | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Arg | Glu | Arg | Ser | Arg | Ser | Phe | Glu | Arg | Ser | His | Lys | Ser | Lys | |

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<210> 214

<211> 730

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 72-73, 85, 91, 127, 226, 268, 454, 484, 513, 566, 663

<223> unknown base

<400> 214

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<210> 215

<211> 1807

<212> DNA

<213> Homo sapiens

<400> 215

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<210> 216

<211> 479
 <212> PRT
 <213> Homo sapiens

<400> 216

| | | | | | | | | | | | | | | | | | | |
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| Met | Ala | Val | Leu | Gly | Val | Gln | Leu | Val | Val | Thr | Leu | Leu | Thr | Ala | 1 | 5 | 10 | 15 |
| Thr | Leu | Met | His | Arg | Leu | Ala | Pro | His | Cys | Ser | Phe | Ala | Arg | Trp | 20 | 25 | 30 | |
| Leu | Leu | Cys | Asn | Gly | Ser | Leu | Phe | Arg | Tyr | Lys | His | Pro | Ser | Glu | 35 | 40 | 45 | |
| Glu | Glu | Leu | Arg | Ala | Leu | Ala | Gly | Lys | Pro | Arg | Pro | Arg | Gly | Arg | 50 | 55 | 60 | |
| Lys | Glu | Arg | Trp | Ala | Asn | Gly | Leu | Ser | Glu | Glu | Lys | Pro | Leu | Ser | 65 | 70 | 75 | |
| Val | Pro | Arg | Asp | Ala | Pro | Phe | Gln | Leu | Glu | Thr | Cys | Pro | Leu | Thr | 80 | 85 | 90 | |
| Thr | Val | Asp | Ala | Leu | Val | Leu | Arg | Phe | Phe | Leu | Glu | Tyr | Gln | Trp | 95 | 100 | 105 | |
| Phe | Val | Asp | Phe | Ala | Val | Tyr | Ser | Gly | Gly | Val | Tyr | Leu | Phe | Thr | 110 | 115 | 120 | |
| Glu | Ala | Tyr | Tyr | Tyr | Met | Leu | Gly | Pro | Ala | Lys | Glu | Thr | Asn | Ile | 125 | 130 | 135 | |
| Ala | Val | Phe | Trp | Cys | Leu | Leu | Thr | Val | Thr | Phe | Ser | Ile | Lys | Met | 140 | 145 | 150 | |
| Phe | Leu | Thr | Val | Thr | Arg | Leu | Tyr | Phe | Ser | Ala | Glu | Glu | Gly | Gly | 155 | 160 | 165 | |
| Glu | Arg | Ser | Val | Cys | Leu | Thr | Phe | Ala | Phe | Leu | Phe | Leu | Leu | Leu | 170 | 175 | 180 | |
| Ala | Met | Leu | Val | Gln | Val | Val | Arg | Glu | Glu | Thr | Leu | Glu | Leu | Gly | 185 | 190 | 195 | |
| Leu | Glu | Pro | Gly | Leu | Ala | Ser | Met | Thr | Gln | Asn | Leu | Glu | Pro | Leu | 200 | 205 | 210 | |
| Leu | Lys | Lys | Gln | Gly | Trp | Asp | Trp | Ala | Leu | Pro | Val | Ala | Lys | Leu | 215 | 220 | 225 | |
| Ala | Ile | Arg | Val | Gly | Leu | Ala | Val | Val | Gly | Ser | Val | Leu | Gly | Ala | 230 | 235 | 240 | |
| Phe | Leu | Thr | Phe | Pro | Gly | Leu | Arg | Leu | Ala | Gln | Thr | His | Arg | Asp | 245 | 250 | 255 | |
| Ala | Leu | Thr | Met | Ser | Glu | Asp | Arg | Pro | Met | Leu | Gln | Phe | Leu | Leu | 260 | 265 | 270 | |
| His | Thr | Ser | Phe | Leu | Ser | Pro | Leu | Phe | Ile | Leu | Trp | Leu | Trp | Thr | 275 | 280 | 285 | |
| Lys | Pro | Ile | Ala | Arg | Asp | Phe | Leu | His | Gln | Pro | Pro | Phe | Gly | Glu | | | | |

00000000 11111111

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<212> DNA
<213> Homo sapiens

<400> 218
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<211> 632

<212> PRT

<213> Homo sapiens

<400> 219

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| | 35 | 40 | 45 |
| Arg Arg Ser Gln | Asp Gly Cys Pro Asp | Gly Cys Ala Ser Leu | Thr |
| | 50 | 55 | 60 |
| Ala Thr Ala Pro | Ser Pro Glu Val Ser | Ala Ala Ala Thr Ile | Ser |
| | 65 | 70 | 75 |
| Leu Met Thr Asp | Glu Pro Gly Leu Asp | Asn Pro Ala Tyr Val | Ser |
| | 80 | 85 | 90 |
| Ser Ala Glu Asp | Gly Gln Pro Ala Ile | Ser Pro Val Asp Ser | Gly |
| | 95 | 100 | 105 |
| Arg Ser Asn Arg | Thr Arg Ala Arg Pro | Phe Glu Arg Ser Thr | Ile |
| | 110 | 115 | 120 |
| Arg Ser Arg Ser | Phe Lys Lys Ile Asn | Arg Ala Leu Ser Val | Leu |
| | 125 | 130 | 135 |
| Arg Arg Thr Lys | Ser Gly Ser Ala Val | Ala Asn His Ala Asp | Gln |
| | 140 | 145 | 150 |
| Gly Arg Glu Asn | Ser Glu Asn Thr Thr | Ala Pro Glu Val Phe | Pro |
| | 155 | 160 | 165 |
| Arg Leu Tyr His | Leu Ile Pro Asp Gly | Glu Ile Thr Ser Ile | Lys |
| | 170 | 175 | 180 |
| Ile Asn Arg Val | Asp Pro Ser Glu Ser | Leu Ser Ile Arg Leu | Val |
| | 185 | 190 | 195 |
| Gly Gly Ser Glu | Thr Pro Leu Val His | Ile Ile Ile Gln His | Ile |
| | 200 | 205 | 210 |
| Tyr Arg Asp Gly | Val Ile Ala Arg Asp | Gly Arg Leu Leu Pro | Gly |
| | 215 | 220 | 225 |
| Asp Ile Ile Leu | Lys Val Asn Gly Met | Asp Ile Ser Asn Val | Pro |
| | 230 | 235 | 240 |
| His Asn Tyr Ala | Val Arg Leu Leu Arg | Gln Pro Cys Gln Val | Leu |
| | 245 | 250 | 255 |
| Trp Leu Thr Val | Met Arg Glu Gln Lys | Phe Arg Ser Arg Asn | Asn |
| | 260 | 265 | 270 |
| Gly Gln Ala Pro | Asp Ala Tyr Arg Pro | Arg Asp Asp Ser Phe | His |
| | 275 | 280 | 285 |
| Val Ile Leu Asn | Lys Ser Ser Pro Glu | Glu Gln Leu Gly Ile | Lys |
| | 290 | 295 | 300 |
| Leu Val Arg Lys | Val Asp Glu Pro Gly | Val Phe Ile Phe Asn | Val |
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| Leu Asp Gly Gly | Val Ala Tyr Arg His | Gly Gln Leu Glu Glu | Asn |

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 <211> 184
 <212> PRT
 <213> Homo sapiens

<400> 221
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 35 40 45
 Lys Asn Thr Ala Ile Val Asn Ile His Ala Gly Ser Cys Ser Ser
 50 55 60
 Thr Thr Ile Phe Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val
 65 70 75
 Leu Ser Arg Arg Ala Cys Phe Ile Leu Lys Met Asp His Gln Asn
 80 85 90

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Pro | Leu | Asn | Asn | Leu | Gln | Trp | Tyr | Ile | Tyr | Glu | Lys | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Leu | Asp | Asn | Met | Phe | Ser | Asn | Lys | Tyr | Thr | Trp | Val | Lys | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Pro | Leu | Glu | Ser | Leu | Ile | Lys | Asp | Val | Asp | Trp | Phe | Leu | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Ser | Pro | Ile | Glu | Lys | Leu | Cys | Lys | His | Ile | Pro | Leu | Tyr | Lys |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gly | Glu | Val | Val | Glu | Asn | Thr | His | Asn | Val | Gly | Ala | Gly | Gly | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Lys | Ala | Gly | Leu | Leu | Gly | Ile | Leu | Gly | Ile | Ser | Ile | Cys | Ala |
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Asp Ile His Val

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<211> 992

<212> DNA

<213> Homo sapiens

<400> 222

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<210> 223

<211> 265

<212> PRT

<213> Homo sapiens

<400> 223

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Pro | Gly | Leu | Phe | Cys | Leu | Ala | Val | Leu | Ala | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Phe | Ser | Lys | Ala | Arg | Glu | Glu | Glu | Ile | Thr | Pro | Val | Val | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Tyr | Lys | Val | Leu | Glu | Val | Phe | Pro | Lys | Gly | Arg | Trp | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ile | Thr | Cys | Cys | Ala | Pro | Gln | Pro | Pro | Pro | Pro | Ile | Thr | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Cys | Gly | Thr | Lys | Asn | Ile | Lys | Val | Ala | Lys | Lys | Val | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Thr | His | Glu | Pro | Ala | Ser | Phe | Asn | Leu | Asn | Val | Thr | Leu | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Pro | Asp | Leu | Leu | Thr | Tyr | Phe | Cys | Arg | Ala | Ser | Ser | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | His | Val | Asp | Ser | Ala | Arg | Leu | Gln | Met | His | Trp | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Trp | Ser | Lys | Pro | Val | Ser | Glu | Leu | Arg | Ala | Asn | Phe | Thr | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asp | Arg | Gly | Ala | Gly | Pro | Arg | Val | Glu | Met | Ile | Cys | Gln | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Gly | Ser | Pro | Pro | Ile | Thr | Asn | Ser | Leu | Ile | Gly | Lys | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gln | Val | His | Leu | Gln | Gln | Arg | Pro | Cys | His | Arg | Gln | Pro | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Phe | Ser | Phe | Leu | Pro | Ser | Gln | Thr | Ser | Asp | Trp | Phe | Trp | Cys |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Ala | Asn | Asn | Ala | Asn | Val | Gln | His | Ser | Ala | Leu | Thr | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Pro | Gly | Gly | Asp | Gln | Lys | Met | Glu | Asp | Trp | Gln | Gly | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Glu | Ser | Pro | Ile | Leu | Ala | Leu | Pro | Leu | Tyr | Arg | Ser | Thr | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Ser | Glu | Glu | Glu | Phe | Gly | Gly | Phe | Arg | Ile | Gly | Asn | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Arg | Gly | Arg | Lys | Ala | Ala | Ala | Met |
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 <213> Homo sapiens

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<212> DNA
<213> Homo sapiens
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201

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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Phe Gly Phe Tyr Ser Lys Ser Gln Tyr Arg Thr Trp Gln Lys Lys
 50 55 60
 Leu Ala Glu Asp Ser Thr Trp Pro Pro Ile Asn Arg Thr Asp Tyr
 65 70 75
 Ser Gly Asp Gly Lys Asn Gly Phe Tyr Ile Asn Gly Gly Tyr Glu
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 gctttgtggc agtgactctg ctagctgccg ccattgtgat tgtcttctat 1700

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Lys | Gly | Ala | Trp | Phe | Leu | Val | Cys | Ser | Gly | Ala | Leu | Val | Asn | 485 | 490 | 495 |
| Glu | Arg | Thr | Val | Val | Val | Ala | Ala | His | Cys | Val | Thr | Asp | Leu | Gly | 500 | 505 | 510 |
| Lys | Val | Thr | Met | Ile | Lys | Thr | Ala | Asp | Leu | Lys | Val | Val | Leu | Gly | 515 | 520 | 525 |
| Lys | Phe | Tyr | Arg | Asp | Asp | Asp | Arg | Asp | Glu | Lys | Thr | Ile | Gln | Ser | 530 | 535 | 540 |
| Leu | Gln | Ile | Ser | Ala | Ile | Ile | Leu | His | Pro | Asn | Tyr | Asp | Pro | Ile | 545 | 550 | 555 |
| Leu | Leu | Asp | Ala | Asp | Ile | Ala | Ile | Leu | Lys | Leu | Leu | Asp | Lys | Ala | 560 | 565 | 570 |
| Arg | Ile | Ser | Thr | Arg | Val | Gln | Pro | Ile | Cys | Leu | Ala | Ala | Ser | Arg | 575 | 580 | 585 |
| Asp | Leu | Ser | Thr | Ser | Phe | Gln | Glu | Ser | His | Ile | Thr | Val | Ala | Gly | 590 | 595 | 600 |
| Trp | Asn | Val | Leu | Ala | Asp | Val | Arg | Ser | Pro | Gly | Phe | Lys | Asn | Asp | 605 | 610 | 615 |
| Thr | Leu | Arg | Ser | Gly | Val | Val | Ser | Val | Val | Asp | Ser | Leu | Leu | Cys | 620 | 625 | 630 |
| Glu | Glu | Gln | His | Glu | Asp | His | Gly | Ile | Pro | Val | Ser | Val | Thr | Asp | 635 | 640 | 645 |
| Asn | Met | Phe | Cys | Ala | Ser | Trp | Glu | Pro | Thr | Ala | Pro | Ser | Asp | Ile | 650 | 655 | 660 |
| Cys | Thr | Ala | Glu | Thr | Gly | Gly | Ile | Ala | Ala | Val | Ser | Phe | Pro | Gly | 665 | 670 | 675 |
| Arg | Ala | Ser | Pro | Glu | Pro | Arg | Trp | His | Leu | Met | Gly | Leu | Val | Ser | 680 | 685 | 690 |
| Trp | Ser | Tyr | Asp | Lys | Thr | Cys | Ser | His | Arg | Leu | Ser | Thr | Ala | Phe | 695 | 700 | 705 |
| Thr | Lys | Val | Leu | Pro | Phe | Lys | Asp | Trp | Ile | Glu | Arg | Asn | Met | Lys | 710 | 715 | 720 |

<210> 232

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 232

aggttcgtga tggagacaac cgcg 24

<210> 233

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 233
tgtcaaggac gcactgccgt catg 24

<210> 234
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 234
tggccagatc atcaagcgtg tctgtggcaa cgagcggcca gtcctatcc 50

<210> 235
<211> 1964
<212> DNA
<213> Homo sapiens

<400> 235
accaggcatt gtatcttcag ttgtcatcaa gttcgcaatc agattggaaa 50
agctcaactt gaagctttct tgccctgcagt gaagcagaga gatagatatt 100
attcacgtaa taaaaaacat gggcttcaac ctgactttcc acctttccta 150
caaattccga ttactgttgc tgttgacttt gtgcctgaca gtggttgggt 200
gggccaccag taactacttc gtgggtgcc a ttcaagagat tcctaaagca 250
aaggagtcca tggctaattt ccataagacc ctcatcttgg ggaagggaaa 300
aactctgact aatgaagcat ccacgaagaa ggtagaactt gacaactgtc 350
cttctgtgtc tccttacctc agaggccaga gcaagctcat tttcaaacca 400
gatctcactt tggaagaggt acaggcagaa aatcccaaag tgtccagagg 450
ccggtatcgc cctcaggaat gtaaagcttt acagagggtc gccatcctcg 500
ttccccaccg gaacagagag aaacacctga tgtacctgct ggaacatctg 550
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ccaggctgaa ggtaaaaagt ttaatcgagc caaactcttg aatgtgggct 650
atctagaagc cctcaaggaa gaaaattggg actgctttat attccacgat 700
gtggacctgg tacccgagaa tgactttaac ctttacaagt gtgaggagca 750
tcccaagcat ctggtggttg gcaggaacag cactgggtac aggttacgtt 800
acagtggata ttttgggggt gttactgccc taagcagaga gcagtttttc 850
aagggtgaatg gattctctaa caactactgg ggatggggag gcgaagacga 900
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tgctgaagt gggtaaatat acaatggtct tccacactag agacaaaggc 1000

aatgaggtga acgcagaacg gatgaagctc ttacaccaag tgtcacgagt 1050
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 ttatataaaa ggatgactca aaggataaaa tgaacgctat ttgaggactc 1450
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 cgtccaaggt agaaaggtag gaagatacaa tactgttatt cttttatcct 1600
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 gttgcaggtg ctgatagcct tcaggggagg acctgccag gtatgccttc 1800
 cagtgatgcc caccagagaa tacattctct attagttttt aaagagtttt 1850
 tgtaaaatga ttttgtacaa gtaggatatg aattagcagt ttacaagttt 1900
 acatattaac taataataaa tatgtctatc aaataoctct gtagtaaaat 1950
 gtgaaaaagc aaaa 1964

<210> 236

<211> 344

<212> PRT

<213> Homo sapiens

<220>

<221> Signal peptide

<222> 1-27

<223> Signal peptide

<220>

<221> N-glycosylation sites

<222> 4-7, 220-223, 335-338

<223> N-glycosylation sites

<220>

<221> Xylose isomerase proteins

<222> 191-201

<223> Xylose isomerase proteins

<400> 236

Met Gly Phe Asn Leu Thr Phe His Leu Ser Tyr Lys Phe Arg Leu
 1 5 10 15

Pro Leu Tyr Ile Asn Ile Thr Val Asp Phe Trp Phe Gly Ala
 335 340

<210> 237
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 237
 ccttacctca gaggccagag caagc 25

<210> 238
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 238
 gagcttcacgc cgttctgcgt tcacc 25

<210> 239
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 239
 caggaatgta aagctttaca gagggtcgcc atcctcgttc cccacc 46

<210> 240
 <211> 2567
 <212> DNA
 <213> Homo sapiens

<400> 240
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 gccgcagttc tcgagctcca gctgcattcc ctccgcgtcc gcccacgct 100
 tctcccgtc cgggccccgc aatggcccag gcagtgtggt cgcgcctcgg 150
 ccgcatcctc tggcttgctt gcctcctgcc ctgggccccg gcaggggtgg 200
 ccgcaggcct gtatgaactc aatctcacca cccatagccc tgccaccacg 250
 ggagcgggtg tgaccatctc ggccagcctg gtggccaagg acaacggcag 300
 cctggccctg cccgctgacg cccacctcta ccgcttcac tggatccaca 350
 ccccgtggt gcttactggc aagatggaga aggtctcag ctccaccatc 400
 cgtgtggtcg gccacgtgcc cggggaattc ccggtctctg tctgggtcac 450
 tgccgctgac tgctggatgt gccagcctgt ggccaggggc tttgtggtcc 500
 tccccatcac agagttcctc gtgggggacc ttgttgcac ccagaacact 550

cctggatggg gggcaggact aatactgagt gattgcagag tgctttataa 2200
 atatcacctt attttatcga aacccatctg tgaaactttc actgaggaaa 2250
 aggccttgca gcggtagaag aggttgagtc aaggccgggc gcggtggctc 2300
 acgcctgtaa tcccagcact ttgggaggcc gaggcgggtg gatcacgaga 2350
 tcaggagatc gagaccaccc tggctaacac ggtgaaaccc cgtctctact 2400
 aaaaaaatac aaaaagttag ccgggcgtgg tgggtgggtgc ctgtagtccc 2450
 agctactcgg gaggctgagg caggagaatg gtgcgaaccc gggaggcgga 2500
 gcttgcatg agcccagatg gcgccactgc actccagcct gagtgcaga 2550
 gcgagactct gtctcca 2567

<210> 241

<211> 423

<212> PRT

<213> Homo sapiens

<400> 241

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gln | Ala | Val | Trp | Ser | Arg | Leu | Gly | Arg | Ile | Leu | Trp | Leu | 1 | 5 | 10 | 15 |
| Ala | Cys | Leu | Leu | Pro | Trp | Ala | Pro | Ala | Gly | Val | Ala | Ala | Gly | Leu | 20 | 25 | 30 | |
| Tyr | Glu | Leu | Asn | Leu | Thr | Thr | Asp | Ser | Pro | Ala | Thr | Thr | Gly | Ala | 35 | 40 | 45 | |
| Val | Val | Thr | Ile | Ser | Ala | Ser | Leu | Val | Ala | Lys | Asp | Asn | Gly | Ser | 50 | 55 | 60 | |
| Leu | Ala | Leu | Pro | Ala | Asp | Ala | His | Leu | Tyr | Arg | Phe | His | Trp | Ile | 65 | 70 | 75 | |
| His | Thr | Pro | Leu | Val | Leu | Thr | Gly | Lys | Met | Glu | Lys | Gly | Leu | Ser | 80 | 85 | 90 | |
| Ser | Thr | Ile | Arg | Val | Val | Gly | His | Val | Pro | Gly | Glu | Phe | Pro | Val | 95 | 100 | 105 | |
| Ser | Val | Trp | Val | Thr | Ala | Ala | Asp | Cys | Trp | Met | Cys | Gln | Pro | Val | 110 | 115 | 120 | |
| Ala | Arg | Gly | Phe | Val | Val | Leu | Pro | Ile | Thr | Glu | Phe | Leu | Val | Gly | 125 | 130 | 135 | |
| Asp | Leu | Val | Val | Thr | Gln | Asn | Thr | Ser | Leu | Pro | Trp | Pro | Ser | Ser | 140 | 145 | 150 | |
| Tyr | Leu | Thr | Lys | Thr | Val | Leu | Lys | Val | Ser | Phe | Leu | Leu | His | Asp | 155 | 160 | 165 | |
| Pro | Ser | Asn | Phe | Leu | Lys | Thr | Ala | Leu | Phe | Leu | Tyr | Ser | Trp | Asp | 170 | 175 | 180 | |
| Phe | Gly | Asp | Gly | Thr | Gln | Met | Val | Thr | Glu | Asp | Ser | Val | Val | Tyr | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Tyr | Asn | Tyr | Ser | Ile | Ile | Gly | Thr | Phe | Thr | Val | Lys | Leu | Lys | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Ala | Glu | Trp | Glu | Glu | Val | Glu | Pro | Asp | Ala | Thr | Arg | Ala | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Lys | Gln | Lys | Thr | Gly | Asp | Phe | Ser | Ala | Ser | Leu | Lys | Leu | Gln | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Leu | Arg | Gly | Ile | Gln | Val | Leu | Gly | Pro | Thr | Leu | Ile | Gln | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Gln | Lys | Met | Thr | Val | Thr | Leu | Asn | Phe | Leu | Gly | Ser | Pro | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Thr | Val | Cys | Trp | Arg | Leu | Lys | Pro | Glu | Cys | Leu | Pro | Leu | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Gly | Glu | Cys | His | Pro | Val | Ser | Val | Ala | Ser | Thr | Ala | Tyr | Asn | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Thr | His | Thr | Phe | Arg | Asp | Pro | Gly | Asp | Tyr | Cys | Phe | Ser | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Arg | Ala | Glu | Asn | Ile | Ile | Ser | Lys | Thr | His | Gln | Tyr | His | Lys | Ile | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gln | Val | Trp | Pro | Ser | Arg | Ile | Gln | Pro | Ala | Val | Phe | Ala | Phe | Pro | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Cys | Ala | Thr | Leu | Ile | Thr | Val | Met | Leu | Ala | Phe | Ile | Met | Tyr | Met | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Thr | Leu | Arg | Asn | Ala | Thr | Gln | Gln | Lys | Asp | Met | Val | Glu | Asn | Pro | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Glu | Pro | Pro | Ser | Gly | Val | Arg | Cys | Cys | Cys | Gln | Met | Cys | Cys | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Pro | Phe | Leu | Leu | Glu | Thr | Pro | Ser | Glu | Tyr | Leu | Glu | Ile | Val | Arg | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Glu | Asn | His | Gly | Leu | Leu | Pro | Pro | Leu | Tyr | Lys | Ser | Val | Lys | Thr | |
| | | | | 410 | | | | | 415 | | | | | 420 | |

Tyr Thr Val

<210> 242
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 242
 catttcctta ccctggaccc agctcc 26

<210> 243
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 243
gaaaggccca cagcacatct ggcag 25

<210> 244
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 244
ccacgaccg agcaacttcc tcaagaccga cttgtttctc tacagc 46

<210> 245
<211> 485
<212> DNA
<213> Homo sapiens

<400> 245
gctcaagacc cagcagtggg acagccagac agacggcacg atggcactga 50
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ctgaccagtg gctctgtttt cccacaacag acgggacaac ttgcagagct 150
gcaaccccag gacagagctg gagccagggc cagctggatg cccatgttcc 200
agaggcgaag gaggcgagac acccacttcc ccattctgcat tttctgctgc 250
ggctgctgtc atcgatcaaa gtgtgggatg tgctgcaaga cgtagaacct 300
acctgccctg ccccgctccc ctcccttctt tatttattcc tgctgcccc 350
gaacataggt cttggaataa aatggctggt tcttttgttt tccccaaaaa 400
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 485

<210> 246
<211> 84
<212> PRT
<213> Homo sapiens

<400> 246
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Leu Leu Leu Ala Ser Leu Thr Ser Gly Ser Val Phe Pro Gln Gln
20 25 30
Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
35 40 45
Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Asp
50 55 60
Thr His Phe Pro Ile Cys Ile Phe Cys Cys Gly Cys Cys His Arg
65 70 75

Ser Lys Cys Gly Met Cys Cys Lys Thr
80

<210> 247
<211> 2359
<212> DNA
<213> Homo sapiens

<400> 247
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tgctggcctg gcctggatct tccaccatgt tcctgttgct gccttttgat 100
agcctgattg tcaaccttct gggcatctcc ctgactgtcc tcttcaccct 150
ccttctcggtt ttcacatag tgccagccat ttttgagtc tcctttggta 200
tccgcaaact ctacatgaaa agtctgttaa aaatctttgc gtgggctacc 250
ttgagaatgg agcaggaggc caaggagaag aaccaccagc tttacaagcc 300
ctacaccaac ggaatcattg caaaggatcc cacttcacta gaagaagaga 350
tcaaagagat tcgtcgaagt ggtagtagta aggctctgga caacactcca 400
gagttcgagc tctctgacat tttctacttt tgccggaaag gaatggagac 450
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atgagtaaac atgttcactt aatgtgttac cggatctgcg tgcgagcgt 750
gacagccatc atcacctacc atgacaggga aaacagacca agaaatggtg 800
gcatctgtgt ggccaatcat acctcaccga tcgatgtgat catcttgcc 850
agcgatggct attatgcat ggtgggtcaa gtgcacgggg gactcatggg 900
tgtgattcag agagccatgg tgaaggcctg cccacacgtc tggtttgagc 950
gctcggagt gaaggatcgc cacctggtgg ctaagagact gactgaacat 1000
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catcaataat acatcgggtg tgatgttcaa aaagggaagt tttgaaattg 1100
gagccacagt ttacctgtt gctatcaagt atgacctca atttggcgat 1150
gccttctgga acagcagcaa atacgggatg gtgacgtacc tgctgcgaat 1200
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ctagagaggc agatgaagat gctgtccagt ttgcgaatag ggtgaaatct 1300
gccattgcc a ggcaggagg acttgtggac ctgctgtggg atgggggcct 1350

gaagagggag aaggtgaagg acacgttcaa ggaggagcag cagaagctgt 1400
acagcaagat gatcgtgggg aaccacaagg acaggagccg ctcttgagcc 1450
tgctccagc tggctggggc caccgtgcgg ggtgccaacg ggctcagagc 1500
tggagttgcc gccgcggccc cactgctgt gtcctttcca gactccaggg 1550
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cggccacccg ctctccagga aaggcacagc tgaggcactg tggctggctt 1900
cggcctcaac atcgccccca gccttgagc tctgcagaca tgataggaag 1950
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gttggtgggga ttaaagtgtc gcgggtgagt gaaggacaca tcacgttcag 2250
tgtttcaagt acaggccac aaaacggggc acggcaggcc tgagctcaga 2300
gctgctgcac tgggctttgg atttgttcct gtgagtaaata aaaactggct 2350
ggtgaatga 2359

<210> 248

<211> 456

<212> PRT

<213> Homo sapiens

<400> 248

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Leu | Leu | Leu | Pro | Phe | Asp | Ser | Leu | Ile | Val | Asn | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gly | Ile | Ser | Leu | Thr | Val | Leu | Phe | Thr | Leu | Leu | Leu | Val | Phe | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ile | Val | Pro | Ala | Ile | Phe | Gly | Val | Ser | Phe | Gly | Ile | Arg | Lys | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Tyr | Met | Lys | Ser | Leu | Leu | Lys | Ile | Phe | Ala | Trp | Ala | Thr | Leu | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Met | Glu | Arg | Gly | Ala | Lys | Glu | Lys | Asn | His | Gln | Leu | Tyr | Lys | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Tyr | Thr | Asn | Gly | Ile | Ile | Ala | Lys | Asp | Pro | Thr | Ser | Leu | Glu | Glu | | 80 | 85 | 90 |
| Glu | Ile | Lys | Glu | Ile | Arg | Arg | Ser | Gly | Ser | Ser | Lys | Ala | Leu | Asp | | 95 | 100 | 105 |
| Asn | Thr | Pro | Glu | Phe | Glu | Leu | Ser | Asp | Ile | Phe | Tyr | Phe | Cys | Arg | | 110 | 115 | 120 |
| Lys | Gly | Met | Glu | Thr | Ile | Met | Asp | Asp | Glu | Val | Thr | Lys | Arg | Phe | | 125 | 130 | 135 |
| Ser | Ala | Glu | Glu | Leu | Glu | Ser | Trp | Asn | Leu | Leu | Ser | Arg | Thr | Asn | | 140 | 145 | 150 |
| Tyr | Asn | Phe | Gln | Tyr | Ile | Ser | Leu | Arg | Leu | Thr | Val | Leu | Trp | Gly | | 155 | 160 | 165 |
| Leu | Gly | Val | Leu | Ile | Arg | Tyr | Cys | Phe | Leu | Leu | Pro | Leu | Arg | Ile | | 170 | 175 | 180 |
| Ala | Leu | Ala | Phe | Thr | Gly | Ile | Ser | Leu | Leu | Val | Val | Gly | Thr | Thr | | 185 | 190 | 195 |
| Val | Val | Gly | Tyr | Leu | Pro | Asn | Gly | Arg | Phe | Lys | Glu | Phe | Met | Ser | | 200 | 205 | 210 |
| Lys | His | Val | His | Leu | Met | Cys | Tyr | Arg | Ile | Cys | Val | Arg | Ala | Leu | | 215 | 220 | 225 |
| Thr | Ala | Ile | Ile | Thr | Tyr | His | Asp | Arg | Glu | Asn | Arg | Pro | Arg | Asn | | 230 | 235 | 240 |
| Gly | Gly | Ile | Cys | Val | Ala | Asn | His | Thr | Ser | Pro | Ile | Asp | Val | Ile | | 245 | 250 | 255 |
| Ile | Leu | Ala | Ser | Asp | Gly | Tyr | Tyr | Ala | Met | Val | Gly | Gln | Val | His | | 260 | 265 | 270 |
| Gly | Gly | Leu | Met | Gly | Val | Ile | Gln | Arg | Ala | Met | Val | Lys | Ala | Cys | | 275 | 280 | 285 |
| Pro | His | Val | Trp | Phe | Glu | Arg | Ser | Glu | Val | Lys | Asp | Arg | His | Leu | | 290 | 295 | 300 |
| Val | Ala | Lys | Arg | Leu | Thr | Glu | His | Val | Gln | Asp | Lys | Ser | Lys | Leu | | 305 | 310 | 315 |
| Pro | Ile | Leu | Ile | Phe | Pro | Glu | Gly | Thr | Cys | Ile | Asn | Asn | Thr | Ser | | 320 | 325 | 330 |
| Val | Met | Met | Phe | Lys | Lys | Gly | Ser | Phe | Glu | Ile | Gly | Ala | Thr | Val | | 335 | 340 | 345 |
| Tyr | Pro | Val | Ala | Ile | Lys | Tyr | Asp | Pro | Gln | Phe | Gly | Asp | Ala | Phe | | 350 | 355 | 360 |
| Trp | Asn | Ser | Ser | Lys | Tyr | Gly | Met | Val | Thr | Tyr | Leu | Leu | Arg | Met | | 365 | 370 | 375 |
| Met | Thr | Ser | Trp | Ala | Ile | Val | Cys | Ser | Val | Trp | Tyr | Leu | Pro | Pro | | 380 | 385 | 390 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Arg | Glu | Ala | Asp | Glu | Asp | Ala | Val | Gln | Phe | Ala | Asn | Arg |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Val | Lys | Ser | Ala | Ile | Ala | Arg | Gln | Gly | Gly | Leu | Val | Asp | Leu | Leu |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Trp | Asp | Gly | Gly | Leu | Lys | Arg | Glu | Lys | Val | Lys | Asp | Thr | Phe | Lys |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Glu | Glu | Gln | Gln | Lys | Leu | Tyr | Ser | Lys | Met | Ile | Val | Gly | Asn | His |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Lys | Asp | Arg | Ser | Arg | Ser | | | | | | | | | |
| | | | | 455 | | | | | | | | | | |

<210> 249
 <211> 1103
 <212> DNA
 <213> Homo sapiens

<400> 249
 gccctcga accaggactc cagcacctct ggtcccggcc tcacccggac 50
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 gccctcggca gcctcggcct ccacacctgg caggcccagg ctgttccac 150
 catcctgccc ctgggcctgg ctccagacac ctttgacgat acctatgtgg 200
 gttgtgcaga ggagatggag gagaaggcag ccccccctgct aaaggaggaa 250
 atggcccacc atgccttgcct gcgggaatcc tgggaggcag cccaggagac 300
 ctgggaggac aagcgtcgag ggcttacctt gcccctggc ttcaaagccc 350
 agaatggaat agccattatg gtctacacca actcatcgaa caccttgtac 400
 tgggagttga atcaggccgt gcggacgggc ggaggctccc gggagctcta 450
 catgaggcac tttcccttca aggccttgc tttctacctg atccggggccc 500
 tgcagctgct gcgaggcagt gggggctgca gcaggggacc tggggaggtg 550
 gtgttccgag gtgtgggcag ccttcgcttt gaacccaaga ggctggggga 600
 ctctgtccgc ttgggccagt ttgcctccag ctccctggat aaggcagtgg 650
 cccacagatt tggggagaag aggcggggct gtgtgtctgc gccaggggtg 700
 cagctagggt cacaatctga gggggcctcc tctctgcccc cctggaagac 750
 tctgctcttg gccctggag agttccagct ctcagggtt gggccctgaa 800
 agtccaacat ctgccactta ggagccctgg gaacgggtga ccttcatatg 850
 acgaagaggc acctccagca gccttgagaa gcaagaacat ggttcggac 900
 ccagccctag cagccttctc cccaaccagg atgttggcct ggggaggcca 950
 cagcagggtg gagggaaact tgctatgtga tggggacttc ctgggacaag 1000
 caaggaaagt actgaggcag ccacttgatt gaacggtgtt gcaatgtgga 1050

gacatggagt tttattgagg tagctacgtg attaaatggt attgcagtgt 1100

gga 1103

<210> 250

<211> 240

<212> PRT

<213> Homo sapiens

<400> 250

Met Ala Leu Ala Ala Leu Met Ile Ala Leu Gly Ser Leu Gly Leu
1 5 10 15

His Thr Trp Gln Ala Gln Ala Val Pro Thr Ile Leu Pro Leu Gly
20 25 30

Leu Ala Pro Asp Thr Phe Asp Asp Thr Tyr Val Gly Cys Ala Glu
35 40 45

Glu Met Glu Glu Lys Ala Ala Pro Leu Leu Lys Glu Glu Met Ala
50 55 60

His His Ala Leu Leu Arg Glu Ser Trp Glu Ala Ala Gln Glu Thr
65 70 75

Trp Glu Asp Lys Arg Arg Gly Leu Thr Leu Pro Pro Gly Phe Lys
80 85 90

Ala Gln Asn Gly Ile Ala Ile Met Val Tyr Thr Asn Ser Ser Asn
95 100 105

Thr Leu Tyr Trp Glu Leu Asn Gln Ala Val Arg Thr Gly Gly Gly
110 115 120

Ser Arg Glu Leu Tyr Met Arg His Phe Pro Phe Lys Ala Leu His
125 130 135

Phe Tyr Leu Ile Arg Ala Leu Gln Leu Leu Arg Gly Ser Gly Gly
140 145 150

Cys Ser Arg Gly Pro Gly Glu Val Val Phe Arg Gly Val Gly Ser
155 160 165

Leu Arg Phe Glu Pro Lys Arg Leu Gly Asp Ser Val Arg Leu Gly
170 175 180

Gln Phe Ala Ser Ser Ser Leu Asp Lys Ala Val Ala His Arg Phe
185 190 195

Gly Glu Lys Arg Arg Gly Cys Val Ser Ala Pro Gly Val Gln Leu
200 205 210

Gly Ser Gln Ser Glu Gly Ala Ser Ser Leu Pro Pro Trp Lys Thr
215 220 225

Leu Leu Leu Ala Pro Gly Glu Phe Gln Leu Ser Gly Val Gly Pro
230 235 240

<210> 251

<211> 50

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 251
ccaccacctg gaggtcctgc agttgggcag gaactccatc cggcagattg 50

<210> 252
<211> 1076
<212> DNA
<213> Homo sapiens

<400> 252
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caacatgcct caccctcatc tatatccttt ggagctcac agggtcagca 100
gcctctggac cagtgaaga gctggtcggt tccgttggtg gggccgtgac 150
tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200
tcaacacaac ccctcttgtc accatacagc cagaaggggg cactatcata 250
gtgacccaaa atcgtaatag ggagagagta gacttcccag atggaggcta 300
ctccctgaag ctacgcaaac tgaagaagaa tgactcaggg atctactatg 350
tggggatata cagctcatca ctccagcagc cctccacca ggagtacgtg 400
ctgcatgtct acgagcacct gtcaaagcct aaagtcacca tgggtctgca 450
gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcattggaac 500
atggggaaga ggatgtgatt tatacctgga aggcctggg gcaagcagcc 550
aatgagtccc ataattgggtc catcctcccc atctcctgga gatggggaga 600
aagtgatatg accttcatct gcgttgccag gaaccctgtc agcagaaact 650
tctcaagccc catccttgcc aggaagctct gtgaagggtc tgctgatgac 700
ccagattcct ccatggtcct cctgtgtctc ctgttggtgc cctcctgct 750
cagtctcttt gtactggggc tatttctttg gtttctgaag agagagagac 800
aagaagagta cattgaagag aagaagagag tggacatttg tcgggaaact 850
cctaacatat gccccattc tggagagaac acagagtacg acacaatccc 900
tcacactaat agaacaatcc taaaggaaga tccagcaaat acggtttact 950
ccactgtgga aataccgaaa aagatggaaa atcccactc actgctcacg 1000
atgccagaca caccaaggct atttgcctat gagaatgtta tctagacagc 1050
agtgcactcc cctaagtctc tgctca 1076

<210> 253
<211> 335
<212> PRT
<213> Homo sapiens

<400> 253
Met Ala Gly Ser Pro Thr Cys Leu Thr Leu Ile Tyr Ile Leu Trp

320

325

330

Tyr Glu Asn Val Ile
335

<210> 254

<211> 1053

<212> DNA

<213> Homo sapiens

<400> 254

ctgggttcccc aacatgcctc accctcatct atatcctttg gcagctcaca 50
gggtcagcag cctctggacc cgtgaaagag ctggtcggtt ccgttggtgg 100
ggccgtgact ttccccctga agtccaaagt aaagcaagtt gactctattg 150
tctggacctt caacacaacc cctcttgtca ccatacagcc agaagggggc 200
actatcatag tgacccaaaa tcgtaatagg gagagagtag acttcccaga 250
tggaggctac tccctgaagc tcagcaaact gaagaagaat gactcaggga 300
tctactatgt ggggatatac agctcatcac tccagcagcc ctccaccag 350
gagtacgtgc tgcatgtcta cgagcacctg tcaaagccta aagtcacat 400
gggtctgcag agcaataaga atggcacctg tgtgaccaat ctgacatgct 450
gcatggaaca tggggaagag gatgtgattt atacctggaa ggccctgggg 500
caagcagcca atgagtccca taatgggtcc atcctcccca tctcctggag 550
atggggagaa agtgatatga ccttcatctg cgttgccagg aaccctgtca 600
gcagaaactt ctcaagcccc atccttgcca ggaagctctg tgaagggtgct 650
gctgatgacc cagattcctc catggtcctc ctgtgtctcc tgttggtgcc 700
cctcctgctc agtctctttg tactggggct atttcttttg tttctgaaga 750
gagagagaca agaagagtac attgaagaga agaagagagt ggacatttgt 800
cgggaaactc ctaacatatg cccccattct ggagagaaca cagagtacga 850
cacaatccct cacactaata gaacaatcct aaaggaagat ccagcaaata 900
cggtttactc cactgtggaa ataccgaaaa agatggaaaa tccccactca 950
ctgctcacga tgccagacac accaaggcta tttgcctatg agaatgttat 1000
ctagacagca gtgcactccc ctaagtctct gctcaaaaaa aaaaaaaaaa 1050
aaa 1053

<210> 255

<211> 860

<212> DNA

<213> Homo sapiens

<400> 255

gaaagacgtg gtcctgacag acagacaatc ctattcccta ccaaaatgaa 50

gatgctgctg ctgctgtgtt tgggactgac cctagtctgt gtccatgcag 100
aagaagctag ttctacggga aggaacttta atgtagaaaa gattaatggg 150
gaatggcata ctattatcct ggcctctgac aaaagagaaa agatagaaga 200
acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250
ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300
tctatgggtg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350
tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400
ttatggctca cctcattaac gaaaaggatg gggaaacctt ccagctgatg 450
gggctctatg gccgagaacc agatttgagt tcagacatca aggaaagggt 500
tgcacaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550
tatccaatgc caatcgctgc ctccaggccc gagaatgaag aatggcctga 600
gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650
tcctatccat acagcatccc cagtataaat tctgtgatct gcattccatc 700
ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750
acctcatcaa gaatcaaaga cttcttttaa tttctctttg atacaccctt 800
gacaattttt catgaaatta ttctctttcc tgttcaataa atgattaccc 850
ttgcacttaa 860

<210> 256

<211> 180

<212> PRT

<213> Homo sapiens

<400> 256

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Met | Leu | Leu | Leu | Leu | Cys | Leu | Gly | Leu | Thr | Leu | Val | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | His | Ala | Glu | Glu | Ala | Ser | Ser | Thr | Gly | Arg | Asn | Phe | Asn | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Lys | Ile | Asn | Gly | Glu | Trp | His | Thr | Ile | Ile | Leu | Ala | Ser | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Arg | Glu | Lys | Ile | Glu | Glu | His | Gly | Asn | Phe | Arg | Leu | Phe | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Gln | Ile | His | Val | Leu | Glu | Asn | Ser | Leu | Val | Leu | Lys | Val | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Thr | Val | Arg | Asp | Glu | Glu | Cys | Ser | Glu | Leu | Ser | Met | Val | Ala | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Thr | Glu | Lys | Ala | Gly | Glu | Tyr | Ser | Val | Thr | Tyr | Asp | Gly | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asn | Thr | Phe | Thr | Ile | Pro | Lys | Thr | Asp | Tyr | Asp | Asn | Phe | Leu | Met |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | His | Leu | Ile | Asn | Glu | Lys | Asp | Gly | Glu | Thr | Phe | Gln | Leu | Met |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gly | Leu | Tyr | Gly | Arg | Glu | Pro | Asp | Leu | Ser | Ser | Asp | Ile | Lys | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Phe | Ala | Gln | Leu | Cys | Glu | Glu | His | Gly | Ile | Leu | Arg | Glu | Asn |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Ile | Asp | Leu | Ser | Asn | Ala | Asn | Arg | Cys | Leu | Gln | Ala | Arg | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |

<210> 257
 <211> 766
 <212> DNA
 <213> Homo sapiens

<400> 257
 ggctcgagcg tttctgagcc aggggtgacc atgacctgct gcgaaggatg 50
 gacatcctgc aatggattca gcctgctggt tctactgctg ttaggagtag 100
 ttctcaatgc gatacctcta attgtcagct tagttgagga agaccaat 150
 tctcaaaacc ccatctcttg ctttgagtgg tggttcccag gaattatagg 200
 agcaggtctg atggccattc cagcaacaac aatgtccttg acagcaagaa 250
 aaagagcgtg ctgcaacaac agaactggaa tgtttctttc atcatttttc 300
 agtgtgatca cagtcattgg tgctctgtat tgcattgctga tatccatcca 350
 ggctctctta aaaggctctc tcatgtgtaa ttctccaagc aacagtaatg 400
 ccaattgtga attttcattg aaaaacatca gtgacattca tccagaatcc 450
 ttcaacttgc agtgggtttt caatgactct tgtgcacctc ctactggttt 500
 caataaacc accagtaacg acaccatggc gagtggctgg agagcatcta 550
 gtttccactt cgattctgaa gaaaacaaac ataggcttat ccacttctca 600
 gtatttttag gtctattgct tggttggaatt ctggaggtcc tgtttgggct 650
 cagtcagata gtcatcggtt tccttggttg tctgtgtgga gtctctaagc 700
 gaagaagtca aattgtgtag tttaatggga ataaaatgta agtatcagta 750
 gtttgaaaaa aaaaaa 766

<210> 258
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 258
 Met Thr Cys Cys Glu Gly Trp Thr Ser Cys Asn Gly Phe Ser Leu
 1 5 10 15
 Leu Val Leu Leu Leu Leu Gly Val Val Leu Asn Ala Ile Pro Leu
 20 25 30
 Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile

| | 35 | 40 | 45 |
|---|-----|-----|-----|
| Ser Cys Phe Glu Trp Trp Phe Pro Gly Ile Ile Gly Ala Gly Leu | 50 | 55 | 60 |
| Met Ala Ile Pro Ala Thr Thr Met Ser Leu Thr Ala Arg Lys Arg | 65 | 70 | 75 |
| Ala Cys Cys Asn Asn Arg Thr Gly Met Phe Leu Ser Ser Phe Phe | 80 | 85 | 90 |
| Ser Val Ile Thr Val Ile Gly Ala Leu Tyr Cys Met Leu Ile Ser | 95 | 100 | 105 |
| Ile Gln Ala Leu Leu Lys Gly Pro Leu Met Cys Asn Ser Pro Ser | 110 | 115 | 120 |
| Asn Ser Asn Ala Asn Cys Glu Phe Ser Leu Lys Asn Ile Ser Asp | 125 | 130 | 135 |
| Ile His Pro Glu Ser Phe Asn Leu Gln Trp Phe Phe Asn Asp Ser | 140 | 145 | 150 |
| Cys Ala Pro Pro Thr Gly Phe Asn Lys Pro Thr Ser Asn Asp Thr | 155 | 160 | 165 |
| Met Ala Ser Gly Trp Arg Ala Ser Ser Phe His Phe Asp Ser Glu | 170 | 175 | 180 |
| Glu Asn Lys His Arg Leu Ile His Phe Ser Val Phe Leu Gly Leu | 185 | 190 | 195 |
| Leu Leu Val Gly Ile Leu Glu Val Leu Phe Gly Leu Ser Gln Ile | 200 | 205 | 210 |
| Val Ile Gly Phe Leu Gly Cys Leu Cys Gly Val Ser Lys Arg Arg | 215 | 220 | 225 |
| Ser Gln Ile Val | | | |

<210> 259
 <211> 434
 <212> DNA
 <213> Homo sapiens

<400> 259
 gtcgaatcca aatcactcat tgtgaaagct gagctcacag ccgaataagc 50
 caccatgagg ctgtcagtgt gtctcctgat ggtctcgctg gccctttgct 100
 gctaccaggc ccatgctott gtctgccag ctgttgcttc tgagatcaca 150
 gtcttcttat tcttaagtga cgctgcggtta aacctccaag ttgccaaact 200
 taatccacct ccagaagctc ttgcagccaa gttggaagtg aagcactgca 250
 ccgatcagat atcttttaag aaacgactct cattgaaaaa gtcttggtgg 300
 aaatagtga aaaatgtggt gtgtgacatg taaaaatgct caacctggtt 350
 tccaaagtct ttcaacgaca ccctgatctt cactaaaaat tgtaaagggt 400

tcaacacggtt gctttaataa atcacttgcc ctgc 434

<210> 260

<211> 83

<212> PRT

<213> Homo sapiens

<400> 260

Met Arg Leu Ser Val Cys Leu Leu Met Val Ser Leu Ala Leu Cys
1 5 10 15

Cys Tyr Gln Ala His Ala Leu Val Cys Pro Ala Val Ala Ser Glu
20 25 30

Ile Thr Val Phe Leu Phe Leu Ser Asp Ala Ala Val Asn Leu Gln
35 40 45

Val Ala Lys Leu Asn Pro Pro Pro Glu Ala Leu Ala Ala Lys Leu
50 55 60

Glu Val Lys His Cys Thr Asp Gln Ile Ser Phe Lys Lys Arg Leu
65 70 75

Ser Leu Lys Lys Ser Trp Trp Lys
80

<210> 261

<211> 636

<212> DNA

<213> Homo sapiens

<400> 261

atccgttctc tgcgctgcca gctcaggtga gccctcgcca aggtgacctc 50

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ctgaccaatt gagctgtgag cctggagcag atcogtgggc tgcagacccc 150

cgccccagtg cctctcccc tgcagccctg cccctcgaac tgtgacatgg 200

agagagtgac cctggccctt ctccactagg caggcctgac tgccttgga 250

gccaatgacc catttgccaa taaagacgat cccttctact atgactggaa 300

aaacctgcag ctgagcggac tgatctgcgg agggctcctg gccattgctg 350

ggatcgcggc agttctgagt ggcaaatgca aatacaagag cagccagaag 400

cagcacagtc ctgtacctga gaaggccatc ccaactcatca ctccaggctc 450

tgccactact tgctgagcac aggactggcc tccagggatg gcctgaagcc 500

taacactggc ccccagcacc tcctcccctg ggaggcctta tcctcaagga 550

aggacttctc tccaagggca ggctgttagg cccctttctg atcaggaggc 600

ttctttatga attaaactcg cccaccacc ccctca 636

<210> 262

<211> 89

<212> PRT

<213> Homo sapiens

[illegible]

<210> 263

<212> DNA

<213> Home

<400> 263

231

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Arg | Ser | Pro | Leu | Ala | Phe | Ile | Pro | Phe | Ser | Ala | Gly | Pro |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Arg | Asn | Cys | Ile | Gly | Gln | Ala | Phe | Ala | Met | Ala | Glu | Met | Lys | Val |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Val | Leu | Ala | Leu | Met | Leu | Leu | His | Phe | Arg | Phe | Leu | Pro | Asp | His |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Thr | Glu | Pro | Arg | Arg | Lys | Leu | Glu | Leu | Ile | Met | Arg | Ala | Glu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Leu | Trp | Leu | Arg | Val | Glu | Pro | Leu | Asn | Val | Gly | Leu | Gln | |
| | | | | 515 | | | | | 520 | | | | | |

<210> 265
 <211> 584
 <212> DNA
 <213> Homo sapiens

<400> 265
 caacagaagc caagaaggaa gccgtctatc ttgtggcgat catgtataag 50
 ctggcctcct gctgtttgct tttcacagga ttcttaaadc ctctcttadc 100
 tcttcctctc cttgactcca gggaaatadc ctttcaactc tcagcacctc 150
 atgaagacgc gcgcttaact ccggaggagc tagaaagagc ttcccttcta 200
 cagatattgc cagagatgct ggggtgcagaa agaggggata ttctcaggaa 250
 agcagactca agtaccaaca tttttaaccc aagaggaaat ttgagaaagt 300
 ttcaggattt ctctggacaa gatcctaaca ttttactgag tcatcttttg 350
 gccagaatct ggaaaccata caagaaacgt gagactcctg attgcttctg 400
 gaaataactgt gtctgaagtg aaataagcat ctgttagtca gctcagaaac 450
 acccatctta gaatatgaaa aataacacaa tgcttgattt gaaaacagtg 500
 tggagaaaaa ctaggcaaac tacacctgtg tcattgttac ctggaaaata 550
 aatcctctat gttttgcaca aaaaaaaaaa aaaa 584

<210> 266
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 266
 Met Tyr Lys Leu Ala Ser Cys Cys Leu Leu Phe Thr Gly Phe Leu
 1 5 10 15
 Asn Pro Leu Leu Ser Leu Pro Leu Leu Asp Ser Arg Glu Ile Ser
 20 25 30
 Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu
 35 40 45
 Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu
 50 55 60

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Glu | Arg | Gly | Asp | Ile | Leu | Arg | Lys | Ala | Asp | Ser | Ser | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Ile | Phe | Asn | Pro | Arg | Gly | Asn | Leu | Arg | Lys | Phe | Gln | Asp | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Gly | Gln | Asp | Pro | Asn | Ile | Leu | Leu | Ser | His | Leu | Leu | Ala | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Trp | Lys | Pro | Tyr | Lys | Lys | Arg | Glu | Thr | Pro | Asp | Cys | Phe | Trp |
| | | | | 110 | | | | | 115 | | | | | 120 |

Lys Tyr Cys Val

<210> 267
 <211> 654
 <212> DNA
 <213> Homo sapiens

<400> 267
 gaacattttt agttcccaag gaatgtacat cagccccacg gaagctaggc 50
 cacctctggg atgggggttg tggttttaaaa caaacgccag tcatcctata 100
 taaggacctg acagccacca ggcaccacct cgcaggagaa ctgcaggccc 150
 acctgtctgc aaccagctg aggccatgcc ctcccaggg accgtctgca 200
 gcctcctgct cctcggcgatg ctctggctgg acttggccat ggcaggctcc 250
 agcttcctga gccctgaaca ccagagagtc cagcagagaa aggagtcgaa 300
 gaagccacca gccaagctgc agccccagagc tctagcaggc tggctccgcc 350
 cggaagatgg aggtcaagca gaagggggcag aggatgaact ggaagtccgg 400
 ttcaacgccc cttttgatgt tggaatcaag ctgtcagggg ttcagtacca 450
 gcagcacagc caggccctgg ggaagtctct tcaggacatc ctctgggaag 500
 aggccaaaga ggccccagcc gacaagtgat cggccacaag cttactcac 550
 ctctctctaa gtttagaagc gtcacatctg cttttcgctt gcttctgcag 600
 caactcccac gactgttgta caagctcagg aggcgaataa atgttcaaac 650
 tgta 654

<210> 268
 <211> 117
 <212> PRT
 <213> Homo sapiens

<400> 268
 Met Pro Ser Pro Gly Thr Val Cys Ser Leu Leu Leu Leu Gly Met
 1 5 10 15
 Leu Trp Leu Asp Leu Ala Met Ala Gly Ser Ser Phe Leu Ser Pro
 20 25 30
 Glu His Gln Arg Val Gln Gln Arg Lys Glu Ser Lys Lys Pro Pro
 35 40 45

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Leu | Gln | Pro | Arg | Ala | Leu | Ala | Gly | Trp | Leu | Arg | Pro | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Gly | Gly | Gln | Ala | Glu | Gly | Ala | Glu | Asp | Glu | Leu | Glu | Val | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Asn | Ala | Pro | Phe | Asp | Val | Gly | Ile | Lys | Leu | Ser | Gly | Val | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Gln | Gln | His | Ser | Gln | Ala | Leu | Gly | Lys | Phe | Leu | Gln | Asp | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Trp | Glu | Glu | Ala | Lys | Glu | Ala | Pro | Ala | Asp | Lys | | | |
| | | | | 110 | | | | | 115 | | | | | |

<210> 269
 <211> 1332
 <212> DNA
 <213> Homo sapiens

<400> 269
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 agaatatgaa cacgtggctg ctgttcctcc ccctgttccc ggtgcaggtg 150
 cagaccctga tagtcgtgat catcgggatg ctctgtctcc tgctggactt 200
 tcttggcttg gtgcacctgg gccagctgct catcttccac atctacctga 250
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 gctgctcatc ttacacctct acttgagtat gtccctaacc ctgagcccc 350
 cagcctggg gccagagtct ttgtcccccg tgtgcgcatg tgttcagggt 400
 cagcctctcc cagaagtgag atcatggaca aaaagggcaa atcacaggaa 450
 gaaattaaat ccatgaggac ccagcaggcc cagcaagaag ctgaactcac 500
 gccgagacct gcaggagtgg tgccagggtg ttgaagtaac aagtttaaaa 550
 tgttcagaga caatggaatg gaatctatta ggcaagaaca ggacattatg 600
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 aaatatatta caggcaggtc accactaac caaacaactg aagcgagagc 700
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 ggaagtaaca acaacctccc tgctcctggc accagccgtt ttggtcatgg 850
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 aggccagccc ccaagaatgc cctgctcctg acagcttggc caaccctgg 1000
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cagagcatcc cctgcctgca gttgtggcaa gaacgccag ctcagaatga 1100
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 accactgtcc ccacacaacc ctggggatgt tttaaaacac acacctctaa 1200
 cgcatatctt acagtcactg ttgtcttgcc tgagggttga atttttttta 1250
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1332

<210> 270
 <211> 142
 <212> PRT
 <213> Homo sapiens

<400> 270
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 Gln Thr Leu Ile Val Val Ile Ile Gly Met Leu Val Leu Leu Leu
 20 25 30
 Asp Phe Leu Gly Leu Val His Leu Gly Gln Leu Leu Ile Phe His
 35 40 45
 Ile Tyr Leu Ser Met Ser Pro Thr Leu Ser Pro Arg Ser Pro Gln
 50 55 60
 Gly Trp Val Val Arg Ala Ala His Leu Thr Pro Leu Leu Glu Tyr
 65 70 75
 Val Pro Asn Pro Glu Pro Pro Thr Pro Gly Ala Arg Val Phe Val
 80 85 90
 Pro Arg Val Arg Met Cys Ser Gly Ser Ala Ser Pro Arg Ser Glu
 95 100 105
 Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met
 110 115 120
 Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro
 125 130 135
 Ala Gly Val Val Pro Gly Ala
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<210> 271
 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 271
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 accatggcca agatggagct ctcgaaggcc ttctctggcc agcggacact 100
 cctatctgcc atcctcagca tgctatcact cagcttctcc acaacatccc 150
 tgctcagcaa ctactggttt gtgggcacac agaaggtgcc caagcccctg 200
 tgcgagaaag gtctggcagc caagtgcttt gacatgccag tgtccctgga 250

tggagataacc aacacatcca cccaggaggt ggtacaatac aactgggaga 300
 ctgggggatga ccggttctcc ttccggagct tccggagtgg catgtggcta 350
 tcctgtgagg aaactgtgga agaaccaggg gagaggtgcc gaagtttcat 400
 tgaacttaca ccaccagcca agagaggtga gaaaggacta ctggaatttg 450
 ccacgttgca aggcccatgt caccocactc tccgatttgg agggaagcgg 500
 ttgatggaga aggcttccct cccctccctt cccttggggc tttgtggcaa 550
 aaatcctatg gttatccctg ggaacgcaga tcacctacat cggacttcaa 600
 ttcacagct tcctcctgct actaacagac ttgctactca ctgggaaccc 650
 tgccctgtggg ctcaaaactga gcgcctttgc tgctgtttcc tctgtcctgt 700
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 ccatcagtgt ttccctcggc ggctgtcaag tgcagcccc accgtgggtc 1000
 ctttgaccag ctaccaccag tatcataatc agcccatcca ctctgtctct 1050
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 ggccagccag gagctgaaag aagcagttag gtcattctgta gaggaagagc 1150
 agtggttagga gttaagcggg tttggggagt aggccttgagc cctaccttac 1200
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 atggttttta gaggtctacga ataaggctat gaataagggt tatctttaag 1300
 tcctaaggga ttccctgggtg ccactgctct cttttcctct acagctccat 1350
 cttgtttcac ccacccaca tctcacacat ccagaattcc cttctttact 1400
 gatagtttct gtgccaggtt ctgggctaaa ccatggagat aaaaagaaga 1450
 gtaaaatata cttcccgcacc ttaaggatct gaaa 1484

<210> 272
 <211> 285
 <212> PRT
 <213> Homo sapiens

<400> 272
 Met Ala Lys Met Glu Leu Ser Lys Ala Phe Ser Gly Gln Arg Thr
 1 5 10 15
 Leu Leu Ser Ala Ile Leu Ser Met Leu Ser Leu Ser Phe Ser Thr
 20 25 30
 Thr Ser Leu Leu Ser Asn Tyr Trp Phe Val Gly Thr Gln Lys Val

<210> 275
<211> 2694
<212> DNA
<213> Homo sapiens

<400> 275
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atgtgccctt ccaatataca acaaatactg gcccctcttt gttctatttt 200
tttacatcct ttcacctatt ccatactgca tagcaagaag attagtggat 250
gatacagatg ctatgagtaa cgcttgtaag gaacttgcca tctttcttac 300
aacgggcatt gtcgtgtcag cttttggact ccctattgta tttgccagag 350
cacatctgat tgagtgggga gcttgtgcac ttgttctcac aggaaacaca 400
gtcatctttg caactatact aggccttttc ttgggtctttg gaagcaatga 450
cgacttcagc tggcagcagt ggtgaaaaga aattactgaa ctattgtcaa 500
atggacttcc tgtcatttgt tggccattca cgcacacagg agatggggca 550
gttaatgctg aatggtatag caagcctctt ggggggtattt taggtgctcc 600
cttctcactt ttattgtaag catactattt tcacagagac ttgctgaagg 650
attaaaagga ttttctcttt tggaaaagct tgactgattt cacacttatt 700
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ttttaatgta atcatttgca ttggttagga attcagaatt ccgccggctc 850
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actcagtgca aatatagctg catttatacc tcagaggggc caagtgttaa 1050
tgcccatgcc ctccgttaag ggttggttgt tttactggta gacagatgtt 1100
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tctcaattgt tagaagaatt tatgttaaac ttttaaggtaa ggggtgtaaa 1200
acatttttga gataaggttt ttatttatgt ttattattgt tagagtgagt 1250
tgcaatgtgg gaagaaatga cattgaaatt ccagtttttg aatcctgttt 1300
ctattttataa gtgaaatttg tgatctccta tcaacctttc atgtttttacc 1350
ctgttaaaat ggacatacat ggaaccacta ctgatgaggg acagttgtat 1400
gtttgcatca tatatgccag aaaaccttcc tctgcttcct ccttttgact 1450

tatttgggtat gttgtatata ttacataaaa taacttttca aatatagttt 1500
aataacactt agaagtgttt acttacctgg aaaataattg ctatgccgta 1550
cattcagagt gccccctccc ctgcaaggcc ttgccatgat taacaagtaa 1600
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agtattttta agacaagttt cctgtatacc tctgaactgt tttgattttg 1750
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gagttaatgc aaagtagcca agtccagcta tatagcagct tcagaaacat 1850
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gtttacatct aataattatc aggacttttt tcaggagtgg gttataaaaa 1950
cattcaagtt ggtctgacag tattttgtta aggatatttg tttgtatgtt 2000
tattcagtat acttacataa aaattatttc gccatcagcc aaaactcagt 2050
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<210> 276

<211> 131

<212> PRT

<213> Homo sapiens

<400> 276

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ile | Lys | Ala | Leu | Ile | Ser | Leu | Ser | Phe | Gly | Gly | Ala |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Leu | Met | Phe | Leu | Met | Leu | Gly | Cys | Ala | Leu | Pro | Ile | Tyr |
| | | | 20 | | | | | 25 | | | | | | 30 |

Asn Lys Tyr Trp Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser

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aactgcgcgc agttaaggaa ctcacgtga gttccaacca gatcacccaa 1100
ctgcccaca ccaccttccg gcccatgccc aacctgcgca gcgtggacct 1150
ctcgtacaac aagctgcagg cgctcgcgcc cgacctcttc cacgggctgc 1200
ggaagctcac cacgtgcat atgcgggcca acgccatcca gtttgtgccc 1250
gtgcgcatct tccaggactg ccgcagcctc aagtttctcg acatcggata 1300
caatcagctc aagagtctgg cgcgcaactc tttcgccggc ttgtttaagc 1350
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 gtca 4104

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Asp | Ser | Asn | Arg | Leu | Thr | Tyr | Ile | Glu | Pro | Arg | Ile | Leu | 290 | 295 | 300 |
| Asn | Ser | Trp | Lys | Ser | Leu | Thr | Ser | Ile | Thr | Leu | Ala | Gly | Asn | Leu | 305 | 310 | 315 |
| Trp | Asp | Cys | Gly | Arg | Asn | Val | Cys | Ala | Leu | Ala | Ser | Trp | Leu | Ser | 320 | 325 | 330 |
| Asn | Phe | Gln | Gly | Arg | Tyr | Asp | Gly | Asn | Leu | Gln | Cys | Ala | Ser | Pro | 335 | 340 | 345 |
| Glu | Tyr | Ala | Gln | Gly | Glu | Asp | Val | Leu | Asp | Ala | Val | Tyr | Ala | Phe | 350 | 355 | 360 |
| His | Leu | Cys | Glu | Asp | Gly | Ala | Glu | Pro | Thr | Ser | Gly | His | Leu | Leu | 365 | 370 | 375 |
| Ser | Ala | Val | Thr | Asn | Arg | Ser | Asp | Leu | Gly | Pro | Pro | Ala | Ser | Ser | 380 | 385 | 390 |
| Ala | Thr | Thr | Leu | Ala | Asp | Gly | Gly | Glu | Gly | Gln | His | Asp | Gly | Thr | 395 | 400 | 405 |
| Phe | Glu | Pro | Ala | Thr | Val | Ala | Leu | Pro | Gly | Gly | Glu | His | Ala | Glu | 410 | 415 | 420 |
| Asn | Ala | Val | Gln | Ile | His | Lys | Val | Val | Thr | Gly | Thr | Met | Ala | Leu | 425 | 430 | 435 |
| Ile | Phe | Ser | Phe | Leu | Ile | Val | Val | Leu | Val | Leu | Tyr | Val | Ser | Trp | 440 | 445 | 450 |
| Lys | Cys | Phe | Pro | Ala | Ser | Leu | Arg | Gln | Leu | Arg | Gln | Cys | Phe | Val | 455 | 460 | 465 |
| Thr | Gln | Arg | Arg | Lys | Gln | Lys | Gln | Lys | Gln | Thr | Met | His | Gln | Met | 470 | 475 | 480 |
| Ala | Ala | Met | Ser | Ala | Gln | Glu | Tyr | Tyr | Val | Asp | Tyr | Lys | Pro | Asn | 485 | 490 | 495 |
| His | Ile | Glu | Gly | Ala | Leu | Val | Ile | Ile | Asn | Glu | Tyr | Gly | Ser | Cys | 500 | 505 | 510 |
| Thr | Cys | His | Gln | Gln | Pro | Ala | Arg | Glu | Cys | Glu | Val | | | | 515 | 520 | |

<210> 279

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 279

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<210> 280

<211> 709

<212> DNA

<213> Homo sapiens

<400> 280
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 ccggcggcgc cgttgagttc ccggcggaca agatgggtgc agtcctggtg 200
 caagaaggtc acgccgtctc agacatgctc ctgccgtgg atggggaact 250
 cgtcctggct tcaggagccg gattcggcgt ctcagacgtg ggctcgcacc 300
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 ggacctggct gttttcctgg cgtcccgccg gggccgccta cgcttcacg 600
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 ccagcccct 709

<210> 281
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 281
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 20 25 30
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 35 40 45
 Gly Ala Val Glu Phe Pro Ala Asp Lys Met Val Ser Val Leu Val
 50 55 60
 Gln Glu Gly His Ala Val Ser Asp Met Leu Leu Pro Leu Asp Gly
 65 70 75
 Glu Leu Val Leu Ala Ser Gly Ala Gly Phe Gly Val Ser Asp Val
 80 85 90
 Gly Ser His Leu Asp Cys Gly Ala Gly Glu Pro Ala Val Phe Arg
 95 100 105
 Asp Ser Asp Arg Phe Ser Trp His Asp Pro His Leu Trp Arg Ser
 110 115 120
 Gly Asp Glu Ala Pro Gly Leu Phe Phe Val Asp Ala Glu Arg Val
 125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Cys | Arg | His | Asp | Asp | Val | Phe | Phe | Pro | Pro | Ser | Ala | Ser | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Val | Gly | Leu | Gly | Pro | Gly | Ala | Ser | Pro | Val | Arg | Val | Arg | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Ser | Ala | Leu | Gly | Arg | Thr | Phe | Thr | Arg | Asp | Glu | Asp | Leu | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Val | Phe | Leu | Ala | Ser | Arg | Ala | Gly | Arg | Leu | Arg | Phe | His | Gly | Pro |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Ala | Leu | Ser | Val | Gly | Pro | Glu | Asp | Cys | Ala | Asp | Pro | Ser | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Cys | Val | Cys | Gly | Asn | Ala | Glu | Ala | Gln | Pro | Trp | Ile | Cys | Ala | Ala |
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 <211> 644
 <212> DNA
 <213> Homo sapiens

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 <211> 77
 <212> PRT
 <213> Homo sapiens

<400> 283
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| | 20 | | 25 | | 30 |
| Cys Ser Ala Phe Trp Trp His Asn Lys Gly Leu Ala Leu Ile Phe | | | | | |
| | 35 | | 40 | | 45 |
| Cys Ile Leu Gln Ser Leu Ala Leu Thr Trp Tyr Ser Leu Ser Phe | | | | | |
| | 50 | | 55 | | 60 |
| Ile Pro Phe Ala Arg Asp Ala Val Lys Lys Cys Phe Ala Val Cys | | | | | |
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| gctgatgaag | ggtggcacat | tttacagaat | aagtcagatg | actttctggt | 1250 |
| aggcaaccac | ggttacgata | atgcgttagc | agatatgcat | ccaatatattt | 1300 |
| tagcccatgg | tcttgccttc | agaaagaatt | tctcaaaaaga | agccatgaac | 1350 |
| tccacagatt | tgtacccact | actatgccac | ctcctcaata | tcaactgccat | 1400 |
| gccacacaat | ggatcattct | ggaatgtcca | ggatctgctc | aattcagcaa | 1450 |
| tgccaagggg | ggtcccttat | acacagagta | ctatactcct | ccctggtagt | 1500 |
| gttaaaccag | cagaatatga | ccaagagggg | tcataccctt | atttcatagg | 1550 |
| ggtctctctt | ggcagcatta | tagtgattgt | atTTTTtGta | attttcatta | 1600 |
| agcatttaat | tcacagtcaa | atacctgcct | tacaagatat | gcatgctgaa | 1650 |
| atagctcaac | cattattaca | agcctaattg | tactttgaag | tggatttgca | 1700 |
| tattgaagtg | gagattccat | aattatgtca | gtgtttaaag | gtttcaaatt | 1750 |
| ctgggaaacc | agttccaaac | atctgcagaa | accattaagc | agttacatat | 1800 |
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| atacttacac | ctgcaaagga | ataaagatgt | gagagtatgt | ctccattggt | 1900 |
| cactgtagca | tagggataga | taagatcctg | ctttatttg | acttggcgca | 1950 |
| gataatgtat | atatttagca | actttgcact | atgtaaagta | ccttatatat | 2000 |
| tgcactttta | atTTTctctcc | tgatgggtac | tttaatttga | aatgcacttt | 2050 |
| atggacagtt | atgtcttata | acttgattga | aaatgacaac | tttttgcacc | 2100 |
| catgtcacag | aatacttggt | acgcattggt | caaactgaag | gaaatttcta | 2150 |
| ataatcccga | ataatgaaca | tagaaatcta | tctccataaa | ttgagagaag | 2200 |
| aagaaggtga | taagtgttga | aaattaaatg | tgataacctt | tgaaccttga | 2250 |
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| attatttgta | tttcttgatg | agtcatat | ctgtgatttt | cataataatg | 2450 |
| aagacaccat | gaatatactt | ttctttctata | tagttcagca | atggcctgaa | 2500 |
| tagaagcaac | caggcaccat | ctcagcaatg | ttttctcttg | tttgtaatta | 2550 |
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<211> 477
 <212> PRT
 <213> Homo sapiens

<400> 285

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| Met | Thr | Ser | Lys | Phe | Ile | Leu | Val | Ser | Phe | Ile | Leu | Ala | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Leu | Ser | Thr | Thr | Phe | Ser | Leu | Gln | Leu | Asp | Gln | Gln | Lys | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Val | Ser | Phe | Asp | Gly | Phe | Arg | Trp | Asp | Tyr | Leu | Tyr | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Pro | Thr | Pro | His | Phe | His | Tyr | Ile | Met | Lys | Tyr | Gly | Val | His |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Lys | Gln | Val | Thr | Asn | Val | Phe | Ile | Thr | Lys | Thr | Tyr | Pro | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| His | Tyr | Thr | Leu | Val | Thr | Gly | Leu | Phe | Ala | Glu | Asn | His | Gly | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Ala | Asn | Asp | Met | Phe | Asp | Pro | Ile | Arg | Asn | Lys | Ser | Phe | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Asp | His | Met | Asn | Ile | Tyr | Asp | Ser | Lys | Phe | Trp | Glu | Glu | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Pro | Ile | Trp | Ile | Thr | Asn | Gln | Arg | Ala | Gly | His | Thr | Ser | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Ala | Met | Trp | Pro | Gly | Thr | Asp | Val | Lys | Ile | His | Lys | Arg | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Thr | His | Tyr | Met | Pro | Tyr | Asn | Glu | Ser | Val | Ser | Phe | Glu | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Val | Ala | Lys | Ile | Val | Glu | Trp | Phe | Thr | Ser | Lys | Glu | Pro | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Leu | Gly | Leu | Leu | Tyr | Trp | Glu | Asp | Pro | Asp | Asp | Met | Gly | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| His | Leu | Gly | Pro | Asp | Ser | Pro | Leu | Met | Gly | Pro | Val | Ile | Ser | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ile | Asp | Lys | Lys | Leu | Gly | Tyr | Leu | Ile | Gln | Met | Leu | Lys | Lys | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Lys | Leu | Trp | Asn | Thr | Leu | Asn | Leu | Ile | Ile | Thr | Ser | Asp | His | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Met | Thr | Gln | Cys | Ser | Glu | Glu | Arg | Leu | Ile | Glu | Leu | Asp | Gln | Tyr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Asp | Lys | Asp | His | Tyr | Thr | Leu | Ile | Asp | Gln | Ser | Pro | Val | Ala |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ala | Ile | Leu | Pro | Lys | Glu | Gly | Lys | Phe | Asp | Glu | Val | Tyr | Glu | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Leu | Thr | His | Ala | His | Pro | Asn | Leu | Thr | Val | Tyr | Lys | Lys | Glu | Asp |

005593-4001

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<211> 255

<212> PRT

<213> Homo sapiens

<400> 287

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| Met | Ala | Thr | Trp | Asp | Glu | Lys | Ala | Val | Thr | Arg | Arg | Ala | Lys | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Pro | Ala | Glu | Arg | Met | Ser | Lys | Phe | Leu | Arg | His | Phe | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Gly | Asp | Asp | Tyr | His | Ala | Trp | Asn | Ile | Asn | Tyr | Lys | Lys | Trp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Asn | Glu | Glu | Glu | Glu | Glu | Glu | Glu | Gln | Pro | Pro | Pro | Pro | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Val | Ser | Gly | Glu | Glu | Gly | Arg | Ala | Ala | Ala | Pro | Asp | Val | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Ala | Pro | Gly | Pro | Ala | Pro | Arg | Ala | Pro | Leu | Asp | Phe | Arg | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Leu | Arg | Lys | Leu | Phe | Ser | Ser | His | Arg | Phe | Gln | Val | Ile | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Cys | Leu | Val | Val | Leu | Asp | Ala | Leu | Leu | Val | Leu | Ala | Glu | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Asp | Leu | Lys | Ile | Ile | Gln | Pro | Asp | Lys | Asn | Asn | Tyr | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Met | Val | Phe | His | Tyr | Met | Ser | Ile | Thr | Ile | Leu | Val | Phe | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Met | Glu | Ile | Ile | Phe | Lys | Leu | Phe | Val | Phe | Arg | Leu | Ser | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Thr | Thr | Ser | Leu | Arg | Ser | Trp | Met | Pro | Val | Val | Val | Val | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Phe | Ile | Leu | Asp | Ile | Val | Leu | Leu | Phe | Gln | Glu | His | Gln | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Ala | Leu | Gly | Leu | Leu | Ile | Leu | Leu | Arg | Leu | Trp | Arg | Val | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Ile | Ile | Asn | Gly | Ile | Ile | Ile | Ser | Val | Lys | Thr | Arg | Ser | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Gln | Leu | Leu | Arg | Leu | Lys | Gln | Met | Asn | Val | Gln | Leu | Ala | Ala |
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| Lys | Ile | Gln | His | Leu | Glu | Phe | Ser | Cys | Ser | Glu | Lys | Pro | Leu | Asp |
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<211> 469

<212> PRT

<213> Homo sapiens

<400> 289

| | | | | | | | | | | | | | | |
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| Thr | Glu | Phe | Gln | Tyr | Phe | Glu | Ser | Lys | Gly | Leu | Pro | Ala | Glu | Leu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Lys | Ser | Ile | Phe | Lys | Leu | Ser | Val | Phe | Ile | Pro | Ser | Gln | Glu | Phe |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ser | Thr | Tyr | Arg | Gln | Trp | Lys | Gln | Lys | Ile | Val | Gln | Ala | Gly | Asp |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Lys | Asp | Leu | Asp | Gly | Gln | Leu | Asp | Phe | Glu | Glu | Phe | Val | His | Tyr |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Leu | Gln | Asp | His | Glu | Lys | Lys | Leu | Arg | Leu | Val | Phe | Lys | Ile | Leu |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Gln | Ala | Ser | Ile | Glu | Gly | Ala | Pro | Glu | Val | Thr | Met | Ser |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ser | Leu | Phe | Lys | His | Ile | Leu | Arg | Thr | Glu | Gly | Ala | Phe | Gly | Leu |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Tyr | Arg | Gly | Leu | Ala | Pro | Asn | Phe | Met | Lys | Val | Ile | Pro | Ala | Val |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Ser | Ile | Ser | Tyr | Val | Val | Tyr | Glu | Asn | Leu | Lys | Ile | Thr | Leu | Gly |
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Val Gln Ser Arg

<210> 290
 <211> 1658
 <212> DNA
 <213> Homo sapiens

<400> 290
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 atttcaggga gacactccat cacagtcact actgtgcct cagctgggaa 200
 cattgggggag gatggaatcc tgagctgcac ttttgaacct gacatcaaac 250
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 <211> 282
 <212> PRT
 <213> Homo sapiens

<400> 291
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 35 40 45
 Gly Asn Ile Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro
 50 55 60
 Asp Ile Lys Leu Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly
 65 70 75
 Val Leu Gly Leu Val His Glu Phe Lys Glu Gly Lys Asp Glu Leu
 80 85 90
 Ser Glu Gln Asp Glu Met Phe Arg Gly Arg Thr Ala Val Phe Ala
 95 100 105
 Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu Lys Asn Val
 110 115 120
 Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile Thr Ser
 125 130 135
 Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala Phe
 140 145 150
 Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 155 | | 160 | | 165 |
| Leu Arg Cys Glu | Ala Pro Arg Trp Phe | Pro Gln Pro Thr Val | Val | | |
| | 170 | 175 | 180 | | |
| Trp Ala Ser Gln | Val Asp Gln Gly Ala | Asn Phe Ser Glu Val | Ser | | |
| | 185 | 190 | 195 | | |
| Asn Thr Ser Phe | Glu Leu Asn Ser Glu | Asn Val Thr Met Lys | Val | | |
| | 200 | 205 | 210 | | |
| Val Ser Val Leu | Tyr Asn Val Thr Ile | Asn Asn Thr Tyr Ser | Cys | | |
| | 215 | 220 | 225 | | |
| Met Ile Glu Asn | Asp Ile Ala Lys Ala | Thr Gly Asp Ile Lys | Val | | |
| | 230 | 235 | 240 | | |
| Thr Glu Ser Glu | Ile Lys Arg Arg Ser | His Leu Gln Leu Leu | Asn | | |
| | 245 | 250 | 255 | | |
| Ser Lys Ala Ser | Leu Cys Val Ser Ser | Phe Phe Ala Ile Ser | Trp | | |
| | 260 | 265 | 270 | | |
| Ala Leu Leu Pro | Leu Ser Pro Tyr Leu | Met Leu Lys | | | |
| | 275 | 280 | | | |

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 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 292
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1484

<210> 293
 <211> 180
 <212> PRT
 <213> Homo sapiens

<400> 293
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 35 40 45
 Gln Glu Met Lys Thr Leu Phe Leu Asn Thr Glu Tyr Leu Met Pro
 50 55 60
 Phe Leu Leu Asn Gln Cys Gly Ser Leu Leu Tyr Tyr Leu Thr Leu
 65 70 75
 Ala Ser Thr Asp Leu Thr Leu Ala Val Pro Ile Cys Asn Ser Leu
 80 85 90
 Ala Ile Ile Phe Thr Leu Ile Val Gly Lys Ala Leu Gly Glu Asp
 95 100 105
 Ile Gly Gly Lys Arg Lys Leu Asp Tyr Cys Glu Cys Gly Thr Gln
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 Leu Cys Gly Ser Arg His Thr Cys Val Ser Ser Phe Pro Glu Pro
 125 130 135
 Ile Ser Pro Glu Trp Val Arg Thr Arg Pro Phe Pro Ile Leu Pro
 140 145 150

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Pro | Leu | Gln | Leu | Phe | Cys | Phe | Leu | Val | Ala | Ile | Arg | Val | Pro |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Pro | Trp | Thr | Val | Trp | Arg | Lys | Thr | Glu | Ala | Gly | Val | Trp | Asp |
| | | | | 170 | | | | | 175 | | | | | 180 |

<210> 294
 <211> 1164
 <212> DNA
 <213> Homo sapiens

<400> 294
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 cggcctaaga tgccacttct tctcatgtcc caggcttgag gccctgtggt 200
 ccccatcctt gggagaagtc agctccagca ccatgaaggg catcctcggt 250
 gctggtatca ctgcagtgtg tgttgagct gtagaatctc tgagctgctg 300
 gcagtgtaat tcatgggaaa aatcctgtgt caacagcatt gcctctgaat 350
 gtccctcaca tgccaacacc agctgtatca gctcctcagc cagctcctct 400
 ctagagacac cagtcagatt ataccagaat atgttctgct cagcggagaa 450
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 aagaacactt tcattttgta agccagtgtg gccaaggaaa ggaatgcagc 550
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 aagaatgaca ttgagtctaa gagtctctgt ctgaaaggct gttccaacgt 750
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<210> 295
 <211> 237
 <212> PRT

<213> Homo sapiens

<400> 295

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Lys | Gly | Ile | Leu | Val | Ala | Gly | Ile | Thr | Ala | Val | Leu | Val | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Val | Glu | Ser | Leu | Ser | Cys | Val | Gln | Cys | Asn | Ser | Trp | Glu | Lys | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ser | Cys | Val | Asn | Ser | Ile | Ala | Ser | Glu | Cys | Pro | Ser | His | Ala | Asn | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Ser | Cys | Ile | Ser | Ser | Ser | Ala | Ser | Ser | Ser | Leu | Glu | Thr | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Arg | Leu | Tyr | Gln | Asn | Met | Phe | Cys | Ser | Ala | Glu | Asn | Cys | Ser | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Glu | Glu | Thr | His | Ile | Thr | Ala | Phe | Thr | Val | His | Val | Ser | Ala | Glu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Glu | His | Phe | His | Phe | Val | Ser | Gln | Cys | Cys | Gln | Gly | Lys | Glu | Cys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ser | Asn | Thr | Ser | Asp | Ala | Leu | Asp | Pro | Pro | Leu | Lys | Asn | Val | Ser | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Ser | Asn | Ala | Glu | Cys | Pro | Ala | Cys | Tyr | Glu | Ser | Asn | Gly | Thr | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Cys | Arg | Gly | Lys | Pro | Trp | Lys | Cys | Tyr | Glu | Glu | Glu | Gln | Cys | Val | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Leu | Val | Ala | Glu | Leu | Lys | Asn | Asp | Ile | Glu | Ser | Lys | Ser | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Leu | Lys | Gly | Cys | Ser | Asn | Val | Ser | Asn | Ala | Thr | Cys | Gln | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Ser | Gly | Glu | Asn | Lys | Thr | Leu | Gly | Gly | Val | Ile | Phe | Arg | Lys | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Glu | Cys | Ala | Asn | Val | Asn | Ser | Leu | Thr | Pro | Thr | Ser | Ala | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Thr | Ser | His | Asn | Val | Gly | Ser | Lys | Ala | Ser | Leu | Tyr | Leu | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Leu | Ala | Ser | Leu | Leu | Leu | Arg | Gly | Leu | Leu | Pro | | | | |
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<210> 296

<211> 1245

<212> DNA

<213> Homo sapiens

<400> 296

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<210> 297

<211> 341

<212> PRT

<213> Homo sapiens

<400> 297

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Ala | Ala | Gly | Ala | Leu | Leu | Trp | Val | Leu | Leu | Leu | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Pro | Arg | Ala | Ala | Gly | Ala | Gln | Gly | Leu | Thr | Gln | Thr | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Glu | Met | Gln | Arg | Val | Ser | Leu | Arg | Phe | Gly | Gly | Pro | Met | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Ser | Tyr | Arg | Ser | Thr | Ala | Arg | Thr | Gly | Leu | Pro | Arg | Lys | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Ile | Ile | Leu | Glu | Asp | Glu | Asn | Asp | Ala | Met | Ala | Asp | Ala | Asp |

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<210> 299

<211> 320

<212> PRT

<213> Homo sapiens

<400> 299

| | | | | | | | | | | | | | | |
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| Met | Ala | Gly | Leu | Ala | Ala | Arg | Leu | Val | Leu | Leu | Ala | Gly | Ala | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Ala | Ser | Gly | Ser | Gln | Gly | Asp | Arg | Glu | Pro | Val | Tyr | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Asp | Cys | Val | Leu | Gln | Cys | Glu | Glu | Gln | Asn | Cys | Ser | Gly | Gly | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Asn | His | Phe | Arg | Ser | Arg | Gln | Pro | Ile | Tyr | Met | Ser | Leu | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Trp | Thr | Cys | Arg | Asp | Asp | Cys | Lys | Tyr | Glu | Cys | Met | Trp | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Gly | Leu | Tyr | Leu | Gln | Glu | Gly | His | Lys | Val | Pro | Gln | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| His | Gly | Lys | Trp | Pro | Phe | Ser | Arg | Phe | Leu | Phe | Phe | Gln | Glu | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Ser | Ala | Val | Ala | Ser | Phe | Leu | Asn | Gly | Leu | Ala | Ser | Leu | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Met | Leu | Cys | Arg | Tyr | Arg | Thr | Phe | Val | Pro | Ala | Ser | Ser | Pro | Met |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Tyr | His | Thr | Cys | Val | Ala | Phe | Ala | Trp | Val | Ser | Leu | Asn | Ala | Trp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Trp | Ser | Thr | Val | Phe | His | Thr | Arg | Asp | Thr | Asp | Leu | Thr | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Lys | Met | Asp | Tyr | Phe | Cys | Ala | Ser | Thr | Val | Ile | Leu | His | Ser | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Tyr | Leu | Cys | Cys | Val | Arg | Thr | Val | Gly | Leu | Gln | His | Pro | Ala | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Val | Ser | Ala | Phe | Arg | Ala | Leu | Leu | Leu | Leu | Met | Leu | Thr | Val | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ser | Tyr | Leu | Ser | Leu | Ile | Arg | Phe | Asp | Tyr | Gly | Tyr | Asn | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Val | Ala | Asn | Val | Ala | Ile | Gly | Leu | Val | Asn | Val | Val | Trp | Trp | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Trp | Cys | Leu | Trp | Asn | Gln | Arg | Arg | Leu | Pro | His | Val | Arg | Lys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Cys | Val | Val | Val | Val | Leu | Leu | Leu | Gln | Gly | Leu | Ser | Leu | Leu | Glu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Leu | Asp | Phe | Pro | Pro | Leu | Phe | Trp | Val | Leu | Asp | Ala | His | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ile | Trp | His | Ile | Ser | Thr | Ile | Pro | Val | His | Val | Leu | Phe | Phe | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Phe | Leu | Glu | Asp | Asp | Ser | Leu | Tyr | Leu | Leu | Lys | Glu | Ser | Glu | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Lys | Phe | Lys | Leu | Asp | | | | | | | | | | |
| | | | | 320 | | | | | | | | | | |

<210> 300

<211> 1674

<212> DNA

<213> Homo sapiens

<400> 300

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cctctgggca tgctgcttgg gctgctgatg gccgcctgct tcaccttctg 150

| 290 | 295 | 300 |
|-------------------------------------|-------------------------|-----|
| Pro Tyr Ala Gln Arg Gln Phe Leu Lys | Leu Gly Gly Leu Gln Val | |
| 305 | 310 | 315 |
| Leu Arg Thr Leu Val Gln Glu Lys Gly | Thr Glu Val Leu Ala Val | |
| 320 | 325 | 330 |
| Arg Val Val Thr Leu Leu Tyr Asp Leu | Val Thr Glu Lys Met Phe | |
| 335 | 340 | 345 |
| Ala Glu Glu Glu Ala Glu Leu Thr Gln | Glu Met Ser Pro Glu Lys | |
| 350 | 355 | 360 |
| Leu Gln Gln Tyr Arg Gln Val His Leu | Leu Pro Gly Leu Trp Glu | |
| 365 | 370 | 375 |
| Gln Gly Trp Cys Glu Ile Thr Ala His | Leu Leu Ala Leu Pro Glu | |
| 380 | 385 | 390 |
| His Asp Ala Arg Glu Lys Val Leu Gln | Thr Leu Gly Val Leu Leu | |
| 395 | 400 | 405 |
| Thr Thr Cys Arg Asp Arg Tyr Arg Gln | Asp Pro Gln Leu Gly Arg | |
| 410 | 415 | 420 |
| Thr Leu Ala Ser Leu Gln Ala Glu Tyr | Gln Val Leu Ala Ser Leu | |
| 425 | 430 | 435 |
| Glu Leu Gln Asp Gly Glu Asp Glu Gly | Tyr Phe Gln Glu Leu Leu | |
| 440 | 445 | 450 |
| Gly Ser Val Asn Ser Leu Leu Lys Glu | Leu Arg | |
| 455 | 460 | |

<210> 302
 <211> 2136
 <212> DNA
 <213> Homo sapiens

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gatggcctat gtttctggtc tctccttcgg tatcatcagt ggtgtcttct 600
 ctgttatcaa tattttggct gatgcacttg ggccagggtg ggttgggata 650
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 gagggtcctt ccgaagtatt cagcgcagcc tcttgtgtaa ggactgacta 950
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 tgtgggaggg gcggggagg tttctataaa ctgtatcatt ttctgctgag 2000
 ggtggagtgt cccatccttt taatcaagg gattgtgatt ttgactaata 2050
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2136

<210> 303
 <211> 247
 <212> PRT
 <213> Homo sapiens

<400> 303

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Ala | Ala | Val | Phe | Phe | Gly | Cys | Thr | Phe | Val | Ala | Phe | Gly | 1 | 5 | 10 | 15 |
| Pro | Ala | Phe | Ala | Leu | Phe | Leu | Ile | Thr | Val | Ala | Gly | Asp | Pro | Leu | 20 | 25 | 30 | |
| Arg | Val | Ile | Ile | Leu | Val | Ala | Gly | Ala | Phe | Phe | Trp | Leu | Val | Ser | 35 | 40 | 45 | |
| Leu | Leu | Leu | Ala | Ser | Val | Val | Trp | Phe | Ile | Leu | Val | His | Val | Thr | 50 | 55 | 60 | |
| Asp | Arg | Ser | Asp | Ala | Arg | Leu | Gln | Tyr | Gly | Leu | Leu | Ile | Phe | Gly | 65 | 70 | 75 | |
| Ala | Ala | Val | Ser | Val | Leu | Leu | Gln | Glu | Val | Phe | Arg | Phe | Ala | Tyr | 80 | 85 | 90 | |
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Asp | Glu | Gly | Leu | Ala | Ser | Leu | Ser | 95 | 100 | 105 | |
| Glu | Asp | Gly | Arg | Ser | Pro | Ile | Ser | Ile | Arg | Gln | Met | Ala | Tyr | Val | 110 | 115 | 120 | |
| Ser | Gly | Leu | Ser | Phe | Gly | Ile | Ile | Ser | Gly | Val | Phe | Ser | Val | Ile | 125 | 130 | 135 | |
| Asn | Ile | Leu | Ala | Asp | Ala | Leu | Gly | Pro | Gly | Val | Val | Gly | Ile | His | 140 | 145 | 150 | |
| Gly | Asp | Ser | Pro | Tyr | Tyr | Phe | Leu | Thr | Ser | Ala | Phe | Leu | Thr | Ala | 155 | 160 | 165 | |
| Ala | Ile | Ile | Leu | Leu | His | Thr | Phe | Trp | Gly | Val | Val | Phe | Phe | Asp | 170 | 175 | 180 | |
| Ala | Cys | Glu | Arg | Arg | Arg | Tyr | Trp | Ala | Leu | Gly | Leu | Val | Val | Gly | 185 | 190 | 195 | |
| Ser | His | Leu | Leu | Thr | Ser | Gly | Leu | Thr | Phe | Leu | Asn | Pro | Trp | Tyr | 200 | 205 | 210 | |
| Glu | Ala | Ser | Leu | Leu | Pro | Ile | Tyr | Ala | Val | Thr | Val | Ser | Met | Gly | 215 | 220 | 225 | |
| Leu | Trp | Ala | Phe | Ile | Thr | Ala | Gly | Gly | Ser | Leu | Arg | Ser | Ile | Gln | 230 | 235 | 240 | |
| Arg | Ser | Leu | Leu | Cys | Lys | Asp | 245 | | | | | | | | | | | |

<210> 304
 <211> 240
 <212> DNA
 <213> Homo sapiens

<220>

<221> unsure
<222> 108, 123, 126, 154, 198, 206, 217
<223> unknown base

<400> 304
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ccttcggnat catcagtggg gtnttntctg ttatcaatat tttggctgat 150
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cctganttca gccttntga cagcagccat tatcctgctc 240

<210> 305
<211> 378
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 58, 94, 132, 186, 191, 220, 240, 248, 280, 311, 332
<223> unknown base

<400> 305
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ctgcttaaga aggcagatga ggggttagca tngctgagtg aggacggaag 150
atcaccatt tccatccgcc agatggccta tgttnttggg ntttccttcg 200
gtatcatcag tgggtgtttt tctgttatca atattttggg tgatgcantt 250
gggccaggtg tgggtgggat ccatggagan tcaccctatt aattcctgaa 300
ttcagccttt ntgacagcag ccattatcct gntccatacc ttttggggag 350
ttgtgttttt tgatgcctgt gagaggag 378

<210> 306
<211> 655
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1, 22, 129, 133, 184
<223> unknown base

<400> 306
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gcgttgccac cccacgcgga ctccccagnt ggnngcgccct tccatttgc 150
ctgtcctggt caggccccca ccccccttc caontgacca gccatggggg 200
ctgcggtgtt tttcggctgc actttcgtcg cgttcggccc ggccttcgcg 250

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 ggttcatctt ggtccatgtg accgaccggt cagatgcccg gctccagtac 400
 ggcctcctga tttttggtgc tgctgtctct gtccttctac aggaggtgtt 450
 ccgctttgcc tactacaagc tgcttaagaa ggcagatgag gggtttagcat 500
 cgctgagtga ggacggaaga tcacccatct ccatccgcc gatggcctat 550
 gtttctggtc tctccttcgg tatcatcagt ggtgtcttct ctgttatcaa 600
 tattttggct gatgcacttg ggccaggtgt ggttgggatc catggagact 650
 cacc 655

<210> 307
 <211> 650
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 52, 89, 128
 <223> unknown base

<400> 307
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 cgttgccacc ccacgcgac tccccagntg gcgcgccct cccatttgcc 150
 tgtcctggtc agggccccac ccccttccc acctgaccag ccatgggggc 200
 tgcggtgttt ttcgggctgc actttcgtcg cgttcggggc cggccttcgc 250
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 tggttcatct tgggtccatgt gaccgaccgg tcagatgcc ggctccagta 400
 cggcctcctg atttttgggt ctgctgtctc tgctcctga caggaggtgt 450
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 tcgctgagtg aggacggaag atcacccatc tccatccgcc agatggccta 550
 tgtttctggg ctctccttcg gtatcatcag tgggtgtctt tctgttatca 600
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<210> 308
 <211> 1570
 <212> DNA
 <213> Homo sapiens

<400> 308
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ctgggtgaggg tggctcagca ggcagggaag gagaggtgtc tgtgcgtcct 200
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ctgagaagtg gaaaaaaaaa 1570

<210> 309


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ccgtgctgct ggccctggct gtgctgctgg ctgtagctgt caccggtgcc 150
gtgctcttcc tgaaccacgc ccacgcgccg ggcacggcgc cccacactgt 200
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<210> 314

<211> 461

<212> PRT

<213> Homo sapiens

<400> 314

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Asn | Asp | Arg | Trp | Lys | Thr | Met | Gly | Gly | Ala | Ala | Gln | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Glu | Asp | Arg | Pro | Arg | Asp | Lys | Pro | Gln | Arg | Pro | Ser | Cys | Gly | Tyr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Leu | Cys | Thr | Val | Leu | Leu | Ala | Leu | Ala | Val | Leu | Leu | Ala | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Val | Thr | Gly | Ala | Val | Leu | Phe | Leu | Asn | His | Ala | His | Ala | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Thr | Ala | Pro | Pro | Pro | Val | Val | Ser | Thr | Gly | Ala | Ala | Ser | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Ser | Ala | Leu | Val | Thr | Val | Glu | Arg | Ala | Asp | Ser | Ser | His | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Ile | Leu | Ile | Asp | Pro | Arg | Cys | Pro | Asp | Leu | Thr | Asp | Ser | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |

<400> 319

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Arg His Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser
35 40 45
Thr Trp Arg Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val
50 55 60
Leu Leu Ile Gly Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr
65 70 75
Tyr Gln Leu Ser Asn Thr Gly Gln Asp Thr Ile Ser Gln Met Glu
80 85 90
Glu Arg Leu Gly Asn Thr Ser Gln Glu Leu Gln Ser Leu Gln Val
95 100 105
Gln Asn Ile Lys Leu Ala Gly Ser Leu Gln His Val Ala Glu Lys
110 115 120
Leu Cys Arg Glu Leu Tyr Asn Lys Ala Gly Ala His Arg Cys Ser
125 130 135
Pro Cys Thr Glu Gln Trp Lys Trp His Gly Asp Asn Cys Tyr Gln
140 145 150
Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp Cys Lys Tyr Phe Cys
155 160 165
Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn Lys Gln Glu Asp
170 175 180
Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe Phe Tyr Ser
185 190 195
Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala Trp Leu
200 205 210
Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile Ile
215 220 225
Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
230 235 240
Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys
245 250 255
Val Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His
260 265 270
Val Pro Pro Glu Thr Leu Gly Glu Gly Asp
275 280

<210> 320

<211> 468

<212> DNA

<213> Homo sapiens

<220>
<221> unsure
<222> 59, 95, 149, 331, 364, 438, 446
<223> unknown base

<400> 320
aattttcacc gctgtaggaa tccagatgca ggccaagtac agcagcacga 50
gggacatgnt ggatgatgat gggacaccac catgagcctg cattntcaag 100
ctttttgccac aattcggcat ccagagcccc ggcgcacaga gcacagggnt 150
cctttttcaa cgtggcgacc agtggccctg accctgctga ctttgtgctt 200
gggtgctgctg atagggctgg cagccctggg gcttttgttt tttcagtact 250
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ttaggaaata cgtcccaaga gttgcaattt nttcaagtcc agaataataa 350
gcttgcagga agtntgcagc atgtggctga aaaactctgt cgtgagctgt 400
ataacaaagc tggaggaact ttgaaggagg gcaaagtntc ctcatntact 450
atacacacac cacttccc 468

<210> 321
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 321
atgcaggcca agtacagcag cac 23

<210> 322
<211> 23
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 322
catgctgacg acttcctgca agc 23

<210> 323
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 323
ccacacagtc tctgcttctt ggg 23

<210> 324
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 324
atgctggatg atgatgggga caccaccatg agcctgcatt 40

<210> 325
<211> 2988
<212> DNA
<213> Homo sapiens

<400> 325
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gagggagcgg gcccgcccg gcggcccgag ccctccggat ccgccccctc 150
cccggccccg cccctcggga gactcctctg gctgctctgg gggttcgccg 200
gggcccggga cccgcgggtcc gggcgccatg cgggcatcgc tgctgctgtc 250
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ggcgcgccgg cccaactcgg tgcagcccg agcggagcgc gagaagcccg 450
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gctccctgcc ttttaataaac tggccaagtg tggaaaaa 2988

<210> 326

<211> 775

<212> PRT

<213> Homo sapiens

<400> 326

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Arg | Ala | Ser | Leu | Leu | Leu | Ser | Val | Leu | Arg | Pro | Ala | Gly | Pro | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Ala | Val | Gly | Ile | Ser | Leu | Gly | Phe | Thr | Leu | Ser | Leu | Leu | Ser | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Thr | Trp | Val | Glu | Glu | Pro | Cys | Gly | Pro | Gly | Pro | Pro | Gln | Pro | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Gly | Asp | Ser | Glu | Leu | Pro | Pro | Arg | Gly | Asn | Thr | Asn | Ala | Ala | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Arg | Pro | Asn | Ser | Val | Gln | Pro | Gly | Ala | Glu | Arg | Glu | Lys | Pro | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ala | Gly | Glu | Gly | Ala | Gly | Glu | Asn | Trp | Glu | Pro | Arg | Val | Leu | Pro | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | His | Pro | Ala | Gln | Pro | Gly | Gln | Ala | Ala | Lys | Lys | Ala | Val | Arg | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Thr | Arg | Tyr | Ile | Ser | Thr | Glu | Leu | Gly | Ile | Arg | Gln | Arg | Leu | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Val | Ala | Val | Leu | Thr | Ser | Gln | Thr | Thr | Leu | Pro | Thr | Leu | Gly | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ala | Val | Asn | Arg | Thr | Leu | Gly | His | Arg | Leu | Glu | Arg | Val | Val | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Thr | Gly | Ala | Arg | Gly | Arg | Arg | Ala | Pro | Pro | Gly | Met | Ala | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Thr | Leu | Gly | Glu | Glu | Arg | Pro | Ile | Gly | His | Leu | His | Leu | Ala | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Arg | His | Leu | Leu | Glu | Gln | His | Gly | Asp | Asp | Phe | Asp | Trp | Phe | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Phe | Leu | Val | Pro | Asp | Thr | Thr | Tyr | Thr | Glu | Ala | His | Gly | Leu | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Arg | Leu | Thr | Gly | His | Leu | Ser | Leu | Ala | Ser | Ala | Ala | His | Leu | Tyr | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Gly | Arg | Pro | Gln | Asp | Phe | Ile | Gly | Gly | Glu | Pro | Thr | Pro | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Arg | Tyr | Cys | His | Gly | Gly | Phe | Gly | Val | Leu | Leu | Ser | Arg | Met | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Gln | Gln | Leu | Arg | Pro | His | Leu | Glu | Gly | Cys | Arg | Asn | Asp | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ser Val Gln Thr | Ala Ala Pro Ser Pro | Leu Arg Leu Met Asp | Leu |
| | 590 | 595 | 600 |
| Leu Ser Lys Lys | His Pro Leu Asp Thr | Leu Phe Leu Leu Ala | Gly |
| | 605 | 610 | 615 |
| Pro Asp Thr Val | Leu Thr Pro Asp Phe | Leu Asn Arg Cys Arg | Met |
| | 620 | 625 | 630 |
| His Ala Ile Ser | Gly Trp Gln Ala Phe | Phe Pro Met His Phe | Gln |
| | 635 | 640 | 645 |
| Ala Phe His Pro | Gly Val Ala Pro Pro | Gln Gly Pro Gly Pro | Pro |
| | 650 | 655 | 660 |
| Glu Leu Gly Arg | Asp Thr Gly Arg Phe | Asp Arg Gln Ala Ala | Ser |
| | 665 | 670 | 675 |
| Glu Ala Cys Phe | Tyr Asn Ser Asp Tyr | Val Ala Ala Arg Gly | Arg |
| | 680 | 685 | 690 |
| Leu Ala Ala Ala | Ser Glu Gln Glu Glu | Glu Leu Leu Glu Ser | Leu |
| | 695 | 700 | 705 |
| Asp Val Tyr Glu | Leu Phe Leu His Phe | Ser Ser Leu His Val | Leu |
| | 710 | 715 | 720 |
| Arg Ala Val Glu | Pro Ala Leu Leu Gln | Arg Tyr Arg Ala Gln | Thr |
| | 725 | 730 | 735 |
| Cys Ser Ala Arg | Leu Ser Glu Asp Leu | Tyr His Arg Cys Leu | Gln |
| | 740 | 745 | 750 |
| Ser Val Leu Glu | Gly Leu Gly Ser Arg | Thr Gln Leu Ala Met | Leu |
| | 755 | 760 | 765 |
| Leu Phe Glu Gln | Glu Gln Gly Asn Ser | Thr | |
| | 770 | 775 | |

<210> 327

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 327

tggaaggctg ccgcaacgac aatc 24

<210> 328

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 328

ctgatgtggc cgatgttctg 20

<210> 329

<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 329
atggctcagt gtgcagacag 20

<210> 330
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 330
gcatgctgct ccgtgaagta gtcc 24

<210> 331
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 331
atgcatggga aagaaggcct gccc 24

<210> 332
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 332
tgcactggtg accacgaggg ggtgcactat agccatctgg agctgag 47

<210> 333
<211> 1095
<212> DNA
<213> Homo sapiens

<400> 333
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gctcccctag tggagaaaag gagtagctat tagccaattc ggcagggccc 150
gcttttttaga agcttgattt cctttgaaga tgaaagacta gcggaagctc 200
tgcctctttc ccagtgggc gaggggaactc ggggcgattg gctgggaact 250
gtatccaccc aaatgtcacc gatttcttcc tatgcaggaa atgagcagac 300
ccatcaataa gaaatttctc agcctggccg aaaatggttg gccccacgaa 350
gccacgacaa ctggaggcaa agagggttgc tcaacgcccc gcctcattgg 400

aaaaccaa at cagatctggg acctatatag cgtggcggag gcggggcgat 450
gattgtcgcg ctgcaccca ctgcagctgc gcacagtcgc atttctttcc 500
ccgccccga gaccctgcag caccatctgt catggcggct gggctgtttg 550
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<210> 334

<211> 153

<212> PRT

<213> Homo sapiens

<400> 334

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Gly | Leu | Phe | Gly | Leu | Ser | Ala | Arg | Arg | Leu | Leu | Ala | 1 | 5 | 10 | 15 |
| Ala | Ala | Ala | Thr | Arg | Gly | Leu | Pro | Ala | Ala | Arg | Val | Arg | Trp | Glu | 20 | 25 | 30 | |
| Ser | Ser | Phe | Ser | Arg | Thr | Val | Val | Ala | Pro | Ser | Ala | Val | Ala | Gly | 35 | 40 | 45 | |
| Lys | Arg | Pro | Pro | Glu | Pro | Thr | Thr | Pro | Trp | Gln | Glu | Asp | Pro | Glu | 50 | 55 | 60 | |
| Pro | Glu | Asp | Glu | Asn | Leu | Tyr | Glu | Lys | Asn | Pro | Asp | Ser | His | Gly | 65 | 70 | 75 | |
| Tyr | Asp | Lys | Asp | Pro | Val | Leu | Asp | Val | Trp | Asn | Met | Arg | Leu | Val | 80 | 85 | 90 | |
| Phe | Phe | Phe | Gly | Val | Ser | Ile | Ile | Leu | Val | Leu | Gly | Ser | Thr | Phe | 95 | 100 | 105 | |
| Val | Ala | Tyr | Leu | Pro | Asp | Tyr | Arg | Met | Lys | Glu | Trp | Ser | Arg | Arg | 110 | 115 | 120 | |
| Glu | Ala | Glu | Arg | Leu | Val | Lys | Tyr | Arg | Glu | Ala | Asn | Gly | Leu | Pro | 125 | 130 | 135 | |
| Ile | Met | Glu | Ser | Asn | Cys | Phe | Asp | Pro | Ser | Lys | Ile | Gln | Leu | Pro | 140 | 145 | 150 | |

Glu Asp Glu

<210> 335
<211> 442
<212> DNA
<213> Homo sapiens

<400> 335
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aggactgtgg tcgccccgtc cgctgtggcg ggaaagcggc cccagaacc 150
gaccacaccg tggcaagagg acccagaacc cgaggacgaa aacttgtatg 200
agaagaaccc agactcccat ggttatgaca aggaccccg tttggacgtc 250
tggaacatgc gacttgtott cttctttggc gtctccatca tcctggtcct 300
tggcagcacc tttgtggcct atctgcctga ctacaggatg aaagagtggg 350
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<210> 336
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 336
ctgagaccct gcagcaccat ctg 23

<210> 337
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 337
ggtgcttctt gagccccact tagc 24

<210> 338
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 338
aatctagctt ctccaggact gtggtcgccc cgtccgctgt 40

<210> 339
<211> 2162
<212> DNA

<213> Homo sapiens

<400> 339

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tcatacccc gctgccttcc ggggacgtag ccgccacatt ccagttccgc 150
acgcgctggg attcggagct tcagcgggaa ggagtgtccc attacaggct 200
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tgcacctgtc attcacacaa ggcttttgga ggacccgata ctgggggcca 300
cccttcctgc agggcccatc aggtgcagag ctgtgggtct ggtccaaga 350
caactgtcact gatgtggata aatcttgaa ggagctcagt aatgtcctct 400
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cagctgcagc tgccgtttct ctctggggag gggagcccaa gggctgtttc 1800
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ggccacctct atattgaggt gctcaataag caaaagtggc cgggtggctgc 2000
tgtattggac agcacagaaa aagatttcca tcaccacaga aaggtcggct 2050
ggcagcactg gccaaagtg tgggggtgtgc tacacagtgt atgtcactgt 2100
gtagtggatg gagtttactg tttgtggaat aaaaacggct gtttccgtgg 2150
aaaaaaaa aa 2162

<210> 340
<211> 574
<212> PRT
<213> Homo sapiens

<400> 340
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Trp Cys Leu Ala Glu Pro Pro Arg Asp Ser Leu Arg Glu Glu Leu
20 25 30
Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe Gln
35 40 45
Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Val Ser
50 55 60
His Tyr Arg Leu Phe Pro Lys Ala Leu Gly Gln Leu Ile Ser Lys
65 70 75
Tyr Ser Leu Arg Glu Leu His Leu Ser Phe Thr Gln Gly Phe Trp
80 85 90
Arg Thr Arg Tyr Trp Gly Pro Pro Phe Leu Gln Ala Pro Ser Gly
95 100 105
Ala Glu Leu Trp Val Trp Phe Gln Asp Thr Val Thr Asp Val Asp
110 115 120
Lys Ser Trp Lys Glu Leu Ser Asn Val Leu Ser Gly Ile Phe Cys
125 130 135
Ala Ser Leu Asn Phe Ile Asp Ser Thr Asn Thr Val Thr Pro Thr
140 145 150

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Ala | Ser | Phe | Lys | Pro 155 | Leu | Gly | Leu | Ala | Asn 160 | Asp | Thr | Asp | His | Tyr 165 |
| Phe | Leu | Arg | Tyr | Ala 170 | Val | Leu | Pro | Arg | Glu 175 | Val | Val | Cys | Thr | Glu 180 |
| Asn | Leu | Thr | Pro | Trp 185 | Lys | Lys | Leu | Leu | Pro 190 | Cys | Ser | Ser | Lys | Ala 195 |
| Gly | Leu | Ser | Val | Leu 200 | Leu | Lys | Ala | Asp | Arg 205 | Leu | Phe | His | Thr | Ser 210 |
| Tyr | His | Ser | Gln | Ala 215 | Val | His | Ile | Arg | Pro 220 | Val | Cys | Arg | Asn | Ala 225 |
| Arg | Cys | Thr | Ser | Ile 230 | Ser | Trp | Glu | Leu | Arg 235 | Gln | Thr | Leu | Ser | Val 240 |
| Val | Phe | Asp | Ala | Phe 245 | Ile | Thr | Gly | Gln | Gly 250 | Lys | Lys | Asp | Trp | Ser 255 |
| Leu | Phe | Arg | Met | Phe 260 | Ser | Arg | Thr | Leu | Thr 265 | Glu | Pro | Cys | Pro | Leu 270 |
| Ala | Ser | Glu | Ser | Arg 275 | Val | Tyr | Val | Asp | Ile 280 | Thr | Thr | Tyr | Asn | Gln 285 |
| Asp | Asn | Glu | Thr | Leu 290 | Glu | Val | His | Pro | Pro 295 | Pro | Thr | Thr | Thr | Tyr 300 |
| Gln | Asp | Val | Ile | Leu 305 | Gly | Thr | Arg | Lys | Thr 310 | Tyr | Ala | Ile | Tyr | Asp 315 |
| Leu | Leu | Asp | Thr | Ala 320 | Met | Ile | Asn | Asn | Ser 325 | Arg | Asn | Leu | Asn | Ile 330 |
| Gln | Leu | Lys | Trp | Lys 335 | Arg | Pro | Pro | Glu | Asn 340 | Glu | Ala | Pro | Pro | Val 345 |
| Pro | Phe | Leu | His | Ala 350 | Gln | Arg | Tyr | Val | Ser 355 | Gly | Tyr | Gly | Leu | Gln 360 |
| Lys | Gly | Glu | Leu | Ser 365 | Thr | Leu | Leu | Tyr | Asn 370 | Thr | His | Pro | Tyr | Arg 375 |
| Ala | Phe | Pro | Val | Leu 380 | Leu | Leu | Asp | Thr | Val 385 | Pro | Trp | Tyr | Leu | Arg 390 |
| Leu | Tyr | Val | His | Thr 395 | Leu | Thr | Ile | Thr | Ser 400 | Lys | Gly | Lys | Glu | Asn 405 |
| Lys | Pro | Ser | Tyr | Ile 410 | His | Tyr | Gln | Pro | Ala 415 | Gln | Asp | Arg | Leu | Gln 420 |
| Pro | His | Leu | Leu | Glu 425 | Met | Leu | Ile | Gln | Leu 430 | Pro | Ala | Asn | Ser | Val 435 |
| Thr | Lys | Val | Ser | Ile 440 | Gln | Phe | Glu | Arg | Ala 445 | Leu | Leu | Lys | Trp | Thr 450 |
| Glu | Tyr | Thr | Pro | Asp 455 | Pro | Asn | His | Gly | Phe 460 | Tyr | Val | Ser | Pro | Ser 465 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Leu | Ser | Ala | Leu | Val | Pro | Ser | Met | Val | Ala | Ala | Lys | Pro | Val | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Asp | Trp | Glu | Glu | Ser | Pro | Leu | Phe | Asn | Ser | Leu | Phe | Pro | Val | Ser | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Asp | Gly | Ser | Asn | Tyr | Phe | Val | Arg | Leu | Tyr | Thr | Glu | Pro | Leu | Leu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Val | Asn | Leu | Pro | Thr | Pro | Asp | Phe | Ser | Met | Pro | Tyr | Asn | Val | Ile | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Cys | Leu | Thr | Cys | Thr | Val | Val | Ala | Val | Cys | Tyr | Gly | Ser | Phe | Tyr | |
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| Asn | Leu | Leu | Thr | Arg | Thr | Phe | His | Ile | Glu | Glu | Pro | Arg | Thr | Gly | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Gly | Leu | Ala | Lys | Arg | Leu | Ala | Asn | Leu | Ile | Arg | Arg | Ala | Arg | Gly | |
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Val Pro Pro Leu

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<400> 342
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<210> 343
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<210> 344
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 <212> DNA
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tcacacagac caggactgtc tgggggaaag gaagtgttgt tacctgcact 200
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<211> 111

<212> PRT

<213> Homo sapiens

<400> 345

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Thr | Leu | Val | Ala | Val | Glu | Gly | Val | Lys | Glu | Gly | Ile | Glu | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Gly | Val | Cys | Pro | Ala | Asp | Asn | Val | Arg | Cys | Phe | Lys | Ser | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Pro | Gln | Cys | His | Thr | Asp | Gln | Asp | Cys | Leu | Gly | Glu | Arg | Lys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Cys | Tyr | Leu | His | Cys | Gly | Phe | Lys | Cys | Val | Ile | Pro | Val | Lys |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Leu | Glu | Glu | Gly | Gly | Asn | Lys | Asp | Glu | Asp | Val | Ser | Arg | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Pro | Glu | Pro | Gly | Trp | Glu | Ala | Lys | Cys | Pro | Gly | Ser | Ser | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Arg | Cys | Pro | Gln | Lys | | | | | | | | | |
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 <213> Homo sapiens

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 <212> PRT
 <213> Homo sapiens

<400> 347
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 35 40 45
 Gln Arg Thr Glu Asn Ile Lys Glu Arg Ser Leu Gln Ser Leu Ala
 50 55 60
 Lys Pro Lys Ser Gln Ala Pro Thr Arg Ala Arg Arg Thr Thr Ile

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|--|
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| Arg | Leu | Ser | Gly | Ala 395 | Leu | Ile | Lys | Gly | Tyr 400 | Glu | Gln | Asp | Val | Gly 405 | | |
| Thr | Arg | Thr | Ser | Phe 410 | Tyr | Gly | Phe | Thr | Ala 415 | Phe | Ser | Leu | Thr | Gln 420 | | |
| Ser | Leu | Leu | Ile | Leu 425 | Gly | Asn | Arg | Gly | Phe 430 | Lys | Asn | Val | Pro | Leu 435 | | |
| Gly | Lys | Asp | Val | Arg 440 | Tyr | Leu | His | Phe | Leu 445 | Glu | Gly | Thr | Arg | Asp 450 | | |
| Tyr | Glu | Trp | Leu | Glu 455 | Ala | Leu | Leu | Met | Asn 460 | Gln | Thr | Val | Met | Ser 465 | | |
| Lys | Asn | Leu | Phe | Trp 470 | Phe | Arg | His | Arg | Pro 475 | Gln | Glu | Ala | Phe | Arg 480 | | |
| Glu | Ala | Leu | His | Met 485 | Asp | Arg | Tyr | Leu | Leu 490 | Leu | His | Pro | Asp | Phe 495 | | |
| Leu | Arg | Tyr | Met | Lys 500 | Asn | Arg | Phe | Leu | Arg 505 | Ser | Lys | Thr | Leu | Asp 510 | | |
| Gly | Ala | His | Trp | Arg 515 | Ile | Tyr | Arg | Pro | Thr 520 | Thr | Gly | Ala | Leu | Leu 525 | | |
| Leu | Leu | Thr | Ala | Leu 530 | Gln | Leu | Cys | Asp | Gln 535 | Val | Ser | Ala | Tyr | Gly 540 | | |
| Phe | Ile | Thr | Glu | Gly 545 | His | Glu | Arg | Phe | Ser 550 | Asp | His | Tyr | Tyr | Asp 555 | | |
| Thr | Ser | Trp | Lys | Arg 560 | Leu | Ile | Phe | Tyr | Ile 565 | Asn | His | Asp | Phe | Lys 570 | | |
| Leu | Glu | Arg | Glu | Val 575 | Trp | Lys | Arg | Leu | His 580 | Asp | Glu | Gly | Ile | Ile 585 | | |
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 Tyr Phe Ser Pro Lys Cys Ser Lys His Phe His Arg Leu Tyr His
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Lys

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<210> 351

<211> 197

<212> PRT

<213> Homo sapiens

<400> 351

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| Met | Pro | Pro | Ala | Gly | Leu | Arg | Arg | Ala | Ala | Pro | Leu | Thr | Ala | Ile | 1 | 5 | 10 | 15 |
| Ala | Leu | Leu | Val | Leu | Gly | Ala | Pro | Leu | Val | Leu | Ala | Gly | Glu | Asp | 20 | 25 | 30 | |
| Cys | Leu | Trp | Tyr | Leu | Asp | Arg | Asn | Gly | Ser | Trp | His | Pro | Gly | Phe | 35 | 40 | 45 | |
| Asn | Cys | Glu | Phe | Phe | Thr | Phe | Cys | Cys | Gly | Thr | Cys | Tyr | His | Arg | 50 | 55 | 60 | |
| Tyr | Cys | Cys | Arg | Asp | Leu | Thr | Leu | Leu | Ile | Thr | Glu | Arg | Gln | Gln | 65 | 70 | 75 | |
| Lys | His | Cys | Leu | Ala | Phe | Ser | Pro | Lys | Thr | Ile | Ala | Gly | Ile | Ala | 80 | 85 | 90 | |
| Ser | Ala | Val | Ile | Leu | Phe | Val | Ala | Val | Val | Ala | Thr | Thr | Ile | Cys | 95 | 100 | 105 | |
| Cys | Phe | Leu | Cys | Ser | Cys | Cys | Tyr | Leu | Tyr | Arg | Arg | Arg | Gln | Gln | 110 | 115 | 120 | |
| Leu | Gln | Ser | Pro | Phe | Glu | Gly | Gln | Glu | Ile | Pro | Met | Thr | Gly | Ile | 125 | 130 | 135 | |
| Pro | Val | Gln | Pro | Val | Tyr | Pro | Tyr | Pro | Gln | Asp | Pro | Lys | Ala | Gly | 140 | 145 | 150 | |
| Pro | Ala | Pro | Pro | Gln | Pro | Gly | Phe | Met | Tyr | Pro | Pro | Ser | Gly | Pro | 155 | 160 | 165 | |
| Ala | Pro | Gln | Tyr | Pro | Leu | Tyr | Pro | Ala | Gly | Pro | Pro | Val | Tyr | Asn | 170 | 175 | 180 | |

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 185 190 195

Gly Ala

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 <211> 3226
 <212> DNA
 <213> Homo sapiens

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<210> 353
 <211> 941
 <212> PRT
 <213> Homo sapiens

<400> 353
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 35 40 45
 Pro Phe Pro Trp Asn Lys Ile Arg Leu Pro Glu Tyr Val Ile Pro
 50 55 60
 Val His Tyr Asp Leu Leu Ile His Ala Asn Leu Thr Thr Leu Thr
 65 70 75
 Phe Trp Gly Thr Thr Lys Val Glu Ile Thr Ala Ser Gln Pro Thr
 80 85 90
 Ser Thr Ile Ile Leu His Ser His His Leu Gln Ile Ser Arg Ala
 95 100 105
 Thr Leu Arg Lys Gly Ala Gly Glu Arg Leu Ser Glu Glu Pro Leu
 110 115 120
 Gln Val Leu Glu His Pro Pro Gln Glu Gln Ile Ala Leu Leu Ala
 125 130 135
 Pro Glu Pro Leu Leu Val Gly Leu Pro Tyr Thr Val Val Ile His
 140 145 150
 Tyr Ala Gly Asn Leu Ser Glu Thr Phe His Gly Phe Tyr Lys Ser
 155 160 165
 Thr Tyr Arg Thr Lys Glu Gly Glu Leu Arg Ile Leu Ala Ser Thr
 170 175 180
 Gln Phe Glu Pro Thr Ala Ala Arg Met Ala Phe Pro Cys Phe Asp
 185 190 195
 Glu Pro Ala Phe Lys Ala Ser Phe Ser Ile Lys Ile Arg Arg Glu
 200 205 210
 Pro Arg His Leu Ala Ile Ser Asn Met Pro Leu Val Lys Ser Val

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Val | Ala | Glu | Gly 230 | Leu | Ile | Glu | Asp | His 235 | Phe | Asp | Val | Thr | Val 240 |
| Lys | Met | Ser | Thr | Tyr 245 | Leu | Val | Ala | Phe | Ile 250 | Ile | Ser | Asp | Phe | Glu 255 |
| Ser | Val | Ser | Lys | Ile 260 | Thr | Lys | Ser | Gly | Val 265 | Lys | Val | Ser | Val | Tyr 270 |
| Ala | Val | Pro | Asp | Lys 275 | Ile | Asn | Gln | Ala | Asp 280 | Tyr | Ala | Leu | Asp | Ala 285 |
| Ala | Val | Thr | Leu | Leu 290 | Glu | Phe | Tyr | Glu | Asp 295 | Tyr | Phe | Ser | Ile | Pro 300 |
| Tyr | Pro | Leu | Pro | Lys 305 | Gln | Asp | Leu | Ala | Ala 310 | Ile | Pro | Asp | Phe | Gln 315 |
| Ser | Gly | Ala | Met | Glu 320 | Asn | Trp | Gly | Leu | Thr 325 | Thr | Tyr | Arg | Glu | Ser 330 |
| Ala | Leu | Leu | Phe | Asp 335 | Ala | Glu | Lys | Ser | Ser 340 | Ala | Ser | Ser | Lys | Leu 345 |
| Gly | Ile | Thr | Val | Thr 350 | Val | Ala | His | Glu | Leu 355 | Ala | His | Gln | Trp | Phe 360 |
| Gly | Asn | Leu | Val | Thr 365 | Met | Glu | Trp | Trp | Asn 370 | Asp | Leu | Trp | Leu | Asn 375 |
| Glu | Gly | Phe | Ala | Lys 380 | Phe | Met | Glu | Phe | Val 385 | Ser | Val | Ser | Val | Thr 390 |
| His | Pro | Glu | Leu | Lys 395 | Val | Gly | Asp | Tyr | Phe 400 | Phe | Gly | Lys | Cys | Phe 405 |
| Asp | Ala | Met | Glu | Val 410 | Asp | Ala | Leu | Asn | Ser 415 | Ser | His | Pro | Val | Ser 420 |
| Thr | Pro | Val | Glu | Asn 425 | Pro | Ala | Gln | Ile | Arg 430 | Glu | Met | Phe | Asp | Asp 435 |
| Val | Ser | Tyr | Asp | Lys 440 | Gly | Ala | Cys | Ile | Leu 445 | Asn | Met | Leu | Arg | Glu 450 |
| Tyr | Leu | Ser | Ala | Asp 455 | Ala | Phe | Lys | Ser | Gly 460 | Ile | Val | Gln | Tyr | Leu 465 |
| Gln | Lys | His | Ser | Tyr 470 | Lys | Asn | Thr | Lys | Asn 475 | Glu | Asp | Leu | Trp | Asp 480 |
| Ser | Met | Ala | Ser | Ile 485 | Cys | Pro | Thr | Asp | Gly 490 | Val | Lys | Gly | Met | Asp 495 |
| Gly | Phe | Cys | Ser | Arg 500 | Ser | Gln | His | Ser | Ser 505 | Ser | Ser | Ser | His | Trp 510 |
| His | Gln | Glu | Gly | Val 515 | Asp | Val | Lys | Thr | Met 520 | Met | Asn | Thr | Trp | Thr 525 |
| Leu | Gln | Arg | Gly | Phe | Pro | Leu | Ile | Thr | Ile | Thr | Val | Arg | Gly | Arg |

| | | | | | 155 | | | | | | 160 | | | | | | 165 |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|--|--|-----|
| Arg | Gly | Gly | Gly | Ile 170 | Phe | Ser | Asn | Leu | Arg 175 | Val | Gln | Gly | Cys | Met 180 | | | |
| Pro | Gln | Pro | Gly | Cys 185 | Asn | Leu | Leu | Asn | Gly 190 | Thr | Gln | Glu | Ile | Gly 195 | | | |
| Pro | Val | Gly | Met | Thr 200 | Glu | Asn | Cys | Asn | Arg 205 | Lys | Asp | Phe | Leu | Thr 210 | | | |
| Cys | His | Arg | Gly | Thr 215 | Thr | Ile | Met | Thr | His 220 | Gly | Asn | Leu | Ala | Gln 225 | | | |
| Glu | Pro | Thr | Asp | Trp 230 | Thr | Thr | Ser | Asn | Thr 235 | Glu | Met | Cys | Glu | Val 240 | | | |
| Gly | Gln | Val | Cys | Gln 245 | Glu | Thr | Leu | Leu | Leu 250 | Ile | Asp | Val | Gly | Leu 255 | | | |
| Thr | Ser | Thr | Leu | Val 260 | Gly | Thr | Lys | Gly | Cys 265 | Ser | Thr | Val | Gly | Ala 270 | | | |
| Gln | Asn | Ser | Gln | Lys 275 | Thr | Thr | Ile | His | Ser 280 | Ala | Pro | Pro | Gly | Val 285 | | | |
| Leu | Val | Ala | Ser | Tyr 290 | Thr | His | Phe | Cys | Ser 295 | Ser | Asp | Leu | Cys | Asn 300 | | | |
| Ser | Ala | Ser | Ser | Ser 305 | Ser | Val | Leu | Leu | Asn 310 | Ser | Leu | Pro | Pro | Gln 315 | | | |
| Ala | Ala | Pro | Val | Pro 320 | Gly | Asp | Arg | Gln | Cys 325 | Pro | Thr | Cys | Val | Gln 330 | | | |
| Pro | Leu | Gly | Thr | Cys 335 | Ser | Ser | Gly | Ser | Pro 340 | Arg | Met | Thr | Cys | Pro 345 | | | |
| Arg | Gly | Ala | Thr | His 350 | Cys | Tyr | Asp | Gly | Tyr 355 | Ile | His | Leu | Ser | Gly 360 | | | |
| Gly | Gly | Leu | Ser | Thr 365 | Lys | Met | Ser | Ile | Gln 370 | Gly | Cys | Val | Ala | Gln 375 | | | |
| Pro | Ser | Ser | Phe | Leu 380 | Leu | Asn | His | Thr | Arg 385 | Gln | Ile | Gly | Ile | Phe 390 | | | |
| Ser | Ala | Arg | Glu | Lys 395 | Arg | Asp | Val | Gln | Pro 400 | Pro | Ala | Ser | Gln | His 405 | | | |
| Glu | Gly | Gly | Gly | Ala 410 | Glu | Gly | Leu | Glu | Ser 415 | Leu | Thr | Trp | Gly | Val 420 | | | |
| Gly | Leu | Ala | Leu | Ala 425 | Pro | Ala | Leu | Trp | Trp 430 | Gly | Val | Val | Cys | Pro 435 | | | |

Ser Cys

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<210> 356
<211> 1238
<212> DNA
<213> Homo sapiens
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| Asp | Ala | Cys | Ser | Val | Gln | Ile | Leu | Val | Pro | Gly | Leu | Lys | Gly | Asp | 45 |
| | | | | 35 | | | | | 40 | | | | | | |
| Ala | Gly | Glu | Lys | Gly | Asp | Lys | Gly | Ala | Pro | Gly | Arg | Pro | Gly | Arg | 60 |
| | | | | 50 | | | | | 55 | | | | | | |
| Val | Gly | Pro | Thr | Gly | Glu | Lys | Gly | Asp | Met | Gly | Asp | Lys | Gly | Gln | 75 |
| | | | | 65 | | | | | 70 | | | | | | |
| Lys | Gly | Ser | Val | Gly | Arg | His | Gly | Lys | Ile | Gly | Pro | Ile | Gly | Ser | 90 |
| | | | | 80 | | | | | 85 | | | | | | |
| Lys | Gly | Glu | Lys | Gly | Asp | Ser | Gly | Asp | Ile | Gly | Pro | Pro | Gly | Pro | 105 |
| | | | | 95 | | | | | 100 | | | | | | |
| Asn | Gly | Glu | Pro | Gly | Leu | Pro | Cys | Glu | Cys | Ser | Gln | Leu | Arg | Lys | 120 |
| | | | | 110 | | | | | 115 | | | | | | |
| Ala | Ile | Gly | Glu | Met | Asp | Asn | Gln | Val | Ser | Gln | Leu | Thr | Ser | Glu | 135 |
| | | | | 125 | | | | | 130 | | | | | | |
| Leu | Lys | Phe | Ile | Lys | Asn | Ala | Val | Ala | Gly | Val | Arg | Glu | Thr | Glu | 150 |
| | | | | 140 | | | | | 145 | | | | | | |
| Ser | Lys | Ile | Tyr | Leu | Leu | Val | Lys | Glu | Glu | Lys | Arg | Tyr | Ala | Asp | 165 |
| | | | | 155 | | | | | 160 | | | | | | |
| Ala | Gln | Leu | Ser | Cys | Gln | Gly | Arg | Gly | Gly | Thr | Leu | Ser | Met | Pro | 180 |
| | | | | 170 | | | | | 175 | | | | | | |
| Lys | Asp | Glu | Ala | Ala | Asn | Gly | Leu | Met | Ala | Ala | Tyr | Leu | Ala | Gln | 195 |
| | | | | 185 | | | | | 190 | | | | | | |
| Ala | Gly | Leu | Ala | Arg | Val | Phe | Ile | Gly | Ile | Asn | Asp | Leu | Glu | Lys | 210 |
| | | | | 200 | | | | | 205 | | | | | | |
| Glu | Gly | Ala | Phe | Val | Tyr | Ser | Asp | His | Ser | Pro | Met | Arg | Thr | Phe | 225 |
| | | | | 215 | | | | | 220 | | | | | | |
| Asn | Lys | Trp | Arg | Ser | Gly | Glu | Pro | Asn | Asn | Ala | Tyr | Asp | Glu | Glu | 240 |
| | | | | 230 | | | | | 235 | | | | | | |
| Asp | Cys | Val | Glu | Met | Val | Ala | Ser | Gly | Gly | Trp | Asn | Asp | Val | Ala | 255 |
| | | | | 245 | | | | | 250 | | | | | | |
| Cys | His | Thr | Thr | Met | Tyr | Phe | Met | Cys | Glu | Phe | Asp | Lys | Glu | Asn | 270 |
| | | | | 260 | | | | | 265 | | | | | | |

Met

<210> 358

<211> 972

<212> DNA

<213> Homo sapiens

<400> 358

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gagcaccggc agcaccagtg tgtgagggga gcaggcagcg gtcttagcca 100

gttccttgat cctgccagac caccagccc ccggcacaga gctgctccac 150

aggcaccatg aggatcatgc tgctattcac agccatcctg gccttcagcc 200
tagctcagag ctttggggct gtctgtaagg agccacagga ggaggtgggt 250
cctggcgggg gccgcagcaa gagggatcca gatctctacc agctgctcca 300
gagactcttc aaaagccact catctctgga gggattgctc aaagccctga 350
gccaggctag cacagatcct aaggaatcaa catctcccga gaaacgtgac 400
atgcatgact tctttgtggg acttatgggc aagaggagcg tccagccaga 450
gggaaagaca ggacctttct taccttcagt gagggttcct cgcccccttc 500
atcccaatca gcttgatcc acaggaaagt cttccctggg aacagaggag 550
cagagacott tataagactc tcctacggat gtgaatcaag agaacgtccc 600
cagctttggc atcctcaagt atcccccgag agcagaatag gtactccact 650
tccggactcc tggactgcat taggaagacc tctttccctg tcccaatccc 700
caggtgogca cgctcctgtt accctttctc ttcctgttc ttgtaacatt 750
cttgtgcttt gactccttct ccatcttttc tacctgaccc tgggtgtggaa 800
actgcatagt gaatatcccc aaccccaatg ggcatgact gtagaatacc 850
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cctcaacaat aaaggatttt tgcataatgaa aaaaaaaaaa aaaaaaaaaa 950
aaaaaaaaa aaaaaaaaaa aa 972

<210> 359

<211> 135

<212> PRT

<213> Homo sapiens

<400> 359

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Ile | Met | Leu | Leu | Phe | Thr | Ala | Ile | Leu | Ala | Phe | Ser | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Gln | Ser | Phe | Gly | Ala | Val | Cys | Lys | Glu | Pro | Gln | Glu | Glu | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Pro | Gly | Gly | Gly | Arg | Ser | Lys | Arg | Asp | Pro | Asp | Leu | Tyr | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Leu | Gln | Arg | Leu | Phe | Lys | Ser | His | Ser | Ser | Leu | Glu | Gly | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Lys | Ala | Leu | Ser | Gln | Ala | Ser | Thr | Asp | Pro | Lys | Glu | Ser | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Pro | Glu | Lys | Arg | Asp | Met | His | Asp | Phe | Phe | Val | Gly | Leu | Met |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Lys | Arg | Ser | Val | Gln | Pro | Glu | Gly | Lys | Thr | Gly | Pro | Phe | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Ser | Val | Arg | Val | Pro | Arg | Pro | Leu | His | Pro | Asn | Gln | Leu | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |

cccaagctcc agtgtggaaa cttccttcct ggctgggttt ccagaactac 1400
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 <211> 159
 <212> PRT
 <213> Homo sapiens

<400> 361
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 20 25 30
 Leu Glu Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser
 35 40 45
 Arg Val Arg Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu
 50 55 60
 Met Leu His Asn Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser
 65 70 75
 Asn Met Glu Tyr Met Val Ser Ala Gly Ser Gly Arg Arg Gly Trp
 80 85 90
 His Arg Gly Trp Gly Leu Gly His Gln Pro Ala Leu Phe Pro Ser
 95 100 105
 Gln Leu Cys Ser Pro Ala Ser Ala Cys Asp Gly Trp Leu Arg Val
 110 115 120
 Ser Ser Gly Arg Gly Gly Ser Arg Leu Cys Ser Val Leu Phe Val
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 Cys Phe Glu Thr Gly Ser His Ser Ala Thr Asp Ala Gly Val Gln
 140 145 150
 Trp His Asn Arg His Ala Leu Lys Pro
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<210> 362
 <211> 422
 <212> DNA
 <213> Homo sapiens

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<210> 365
<211> 67
<212> PRT
<213> Homo sapiens

<400> 365
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35 40 45
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Leu Pro Ser Asp Cys Ser Lys
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<210> 366
<211> 2475
<212> DNA
<213> Homo sapiens

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acaagagtgc agtgggtaac ttggcactga gagttgaacg tgccaacgg 400
gagattgact acatacaata ccttcgagag gctgacgagt gcatcgtatc 450
agaggacaag aactggcag aaatgttgct ccaagaagct gaagaagaga 500

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 gatgaaagat gctgtctata actctccaaa ggtgtactta ttaattggat 650
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<210> 367
 <211> 402
 <212> PRT
 <213> Homo sapiens

<400> 367
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 35 40 45
 Leu Glu Lys Cys Thr Gln Ala Thr Arg Ala Tyr Ile Gln Glu Phe
 50 55 60
 Gln Glu Phe Ser Lys Asn Ile Ser Val Met Leu Gly Arg Cys Gln
 65 70 75
 Thr Tyr Thr Ser Glu Tyr Lys Ser Ala Val Gly Asn Leu Ala Leu
 80 85 90
 Arg Val Glu Arg Ala Gln Arg Glu Ile Asp Tyr Ile Gln Tyr Leu
 95 100 105
 Arg Glu Ala Asp Glu Cys Ile Val Ser Glu Asp Lys Thr Leu Ala
 110 115 120
 Glu Met Leu Leu Gln Glu Ala Glu Glu Glu Lys Lys Ile Arg Thr
 125 130 135
 Leu Leu Asn Ala Ser Cys Asp Asn Met Leu Met Gly Ile Lys Ser
 140 145 150
 Leu Lys Ile Val Lys Lys Met Met Asp Thr His Gly Ser Trp Met
 155 160 165
 Lys Asp Ala Val Tyr Asn Ser Pro Lys Val Tyr Leu Leu Ile Gly
 170 175 180
 Ser Arg Asn Asn Thr Val Trp Glu Phe Ala Asn Ile Arg Ala Phe
 185 190 195
 Met Glu Asp Asn Thr Lys Pro Ala Pro Arg Lys Gln Ile Leu Thr
 200 205 210

00989729 44604

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Trp | Gln | Gly | Thr | Gly | Gln | Val | Ile | Tyr | Lys | Gly | Phe | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Phe | Phe | His | Asn | Gln | Ala | Thr | Ser | Asn | Glu | Ile | Ile | Lys | Tyr | Asn |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Gln | Lys | Arg | Thr | Val | Glu | Asp | Arg | Met | Leu | Leu | Pro | Gly | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Val | Gly | Arg | Ala | Leu | Val | Tyr | Gln | His | Ser | Pro | Ser | Thr | Tyr | Ile |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Asp | Leu | Ala | Val | Asp | Glu | His | Gly | Leu | Trp | Ala | Ile | His | Ser | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Pro | Gly | Thr | His | Ser | His | Leu | Val | Leu | Thr | Lys | Ile | Glu | Pro | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Thr | Leu | Gly | Val | Glu | His | Ser | Trp | Asp | Thr | Pro | Cys | Arg | Ser | Gln |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Asp | Ala | Glu | Ala | Ser | Phe | Leu | Leu | Cys | Gly | Val | Leu | Tyr | Val | Val |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Tyr | Ser | Thr | Gly | Gly | Gln | Gly | Pro | His | Arg | Ile | Thr | Cys | Ile | Tyr |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Asp | Pro | Leu | Gly | Thr | Ile | Ser | Glu | Glu | Asp | Leu | Pro | Asn | Leu | Phe |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Phe | Pro | Lys | Arg | Pro | Arg | Ser | His | Ser | Met | Ile | His | Tyr | Asn | Pro |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Arg | Asp | Lys | Gln | Leu | Tyr | Ala | Trp | Asn | Glu | Gly | Asn | Gln | Ile | Ile |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Tyr | Lys | Leu | Gln | Thr | Lys | Arg | Lys | Leu | Pro | Leu | Lys | | | |
| | | | | 395 | | | | | 400 | | | | | |

<210> 368
 <211> 2281
 <212> DNA
 <213> Homo sapiens

<400> 368
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 ctggccctga tggcgacggc ggcggtagcg cgggggtggc tgcgcgcggg 150
 ggaggagagg agcggccggc ccgcctgccca aaaagcaaata ggattttcac 200
 ctgacaaatc ttcgggatcc aagaagcaga aacaatatca gcggattcgg 250
 aaggagaagc ctcaacaaca caacttcacc caccgcctcc tggctgcagc 300
 tctgaagagc cacagcggga acatatcttg catggacttt agcagcaatg 350
 gcaaatacct ggctacctgt gcagatgatc gcaccatccg catctggagc 400
 accaaggact tcctgcagcg agagcaccgc agcatgagag ccaacgtgga 450

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Phe | Val | Ala | Ser | Cys | Gly | Phe | Thr | Pro | Asp | Val | Lys | Val | 245 | 250 | 255 |
| Trp | Glu | Val | Cys | Phe | Gly | Lys | Lys | Gly | Glu | Phe | Gln | Glu | Val | Val | 260 | 265 | 270 |
| Arg | Ala | Phe | Glu | Leu | Lys | Gly | His | Ser | Ala | Ala | Val | His | Ser | Phe | 275 | 280 | 285 |
| Ala | Phe | Ser | Asn | Asp | Ser | Arg | Arg | Met | Ala | Ser | Val | Ser | Lys | Asp | 290 | 295 | 300 |
| Gly | Thr | Trp | Lys | Leu | Trp | Asp | Thr | Asp | Val | Glu | Tyr | Lys | Lys | Lys | 305 | 310 | 315 |
| Gln | Asp | Pro | Tyr | Leu | Leu | Lys | Thr | Gly | Arg | Phe | Glu | Glu | Ala | Ala | 320 | 325 | 330 |
| Gly | Ala | Ala | Pro | Cys | Arg | Leu | Ala | Leu | Ser | Pro | Asn | Ala | Gln | Val | 335 | 340 | 345 |
| Leu | Ala | Leu | Ala | Ser | Gly | Ser | Ser | Ile | His | Leu | Tyr | Asn | Thr | Arg | 350 | 355 | 360 |
| Arg | Gly | Glu | Lys | Glu | Glu | Cys | Phe | Glu | Arg | Val | His | Gly | Glu | Cys | 365 | 370 | 375 |
| Ile | Ala | Asn | Leu | Ser | Phe | Asp | Ile | Thr | Gly | Arg | Phe | Leu | Ala | Ser | 380 | 385 | 390 |
| Cys | Gly | Asp | Arg | Ala | Val | Arg | Leu | Phe | His | Asn | Thr | Pro | Gly | His | 395 | 400 | 405 |
| Arg | Ala | Met | Val | Glu | Glu | Met | Gln | Gly | His | Leu | Lys | Arg | Ala | Ser | 410 | 415 | 420 |
| Asn | Glu | Ser | Thr | Arg | Gln | Arg | Leu | Gln | Gln | Gln | Leu | Thr | Gln | Ala | 425 | 430 | 435 |
| Gln | Glu | Thr | Leu | Lys | Ser | Leu | Gly | Ala | Leu | Lys | Lys | | | | 440 | 445 | |

<210> 370
 <211> 1415
 <212> DNA
 <213> Homo sapiens

<400> 370
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 ccaacgcgagt ctcaatcatg ctctctctag taactgtgtc tgactgtgct 150
 gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200
 ctgtgccatc agcctgtggc ttcgagggtc gcggatgtgc accccgctgg 250
 ggcgggaagg cgaggagtgc caccgccgga gccacaaggc ccccttcttc 300
 aggaaacgca agcaccacac ctgtccttgc ttgcccacc tgctgtgctc 350
 caggttcccg gacggcaggt accgctgctc catggacttg aagaacatca 400

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Cys | Pro | Cys | Leu | Pro | Asn | Leu | Leu | Cys | Ser | Arg | Phe | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Gly | Arg | Tyr | Arg | Cys | Ser | Met | Asp | Leu | Lys | Asn | Ile | Asn | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |

<210> 372
 <211> 1281
 <212> DNA
 <213> Homo sapiens

<400> 372
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 cattggtgca ggagccctgg gggctgctgc cttggcattg ctgcttgcca 150
 acacagacgt gtttctgtcc aagccccaga aagcgccctt ggagtacctg 200
 gaggatatag acctgaaaac actggagaag gaaccaagga ctttcaaagc 250
 aaaggagcta tgggaaaaaa atggagctgt gattatggcc gtgcggaggc 300
 caggctgttt cctctgtcga gaggaagctg cggatctgtc ctccctgaaa 350
 agcatgttgg accagctggg cgtccccctc tatgcagtgg taaaggagca 400
 catcaggact gaagtgaagg atttccagcc ttatttcaaa ggagaaatct 450
 tcctggatga aaagaaaaag ttctatggtc cacaaaggcg gaagatgatg 500
 tttatgggat ttatccgtct gggagtgtgg tacaacttct tccgagcctg 550
 gaacggaggc ttctctggaa acctggaagg agaaggcttc atccttgggg 600
 gagttttcgt ggtgggatca ggaaagcagg gcattcttct tgagcaccga 650
 gaaaaagaat ttggagacaa agtaaaccta ctttctgttc tggaagctgc 700
 taagatgata aaaccacaga ctttggcctc agagaaaaaa tgattgtgtg 750
 aaactgcccc gctcagggat aaccaggac attcacctgt gttcatggga 800
 tgtattgttt ccactcgtgt ccctaaggag tgagaaacc atttatactc 850
 tactctcagt atggattatt aatgtatatt aatattctgt ttaggcccac 900
 taaggcaaaa tagccccaaa acaagactga caaaaatctg aaaaactaat 950
 gaggattatt aagctaaaac ctgggaaata ggaggcttaa aattgactgc 1000
 caggctgggt gcagtggctc acacctgtaa tcccagcact ttgggaggcc 1050
 aaggtgagca agtcacttga ggtcgggagt tcgagaccag cctgagcaac 1100
 atggcgaaac cccgtctcta ctaaaaatac aaaaatcacc cgggtgtggg 1150
 ggcaggcacc tgtagtccca gctaccggg aggctgaggc aggagaatca 1200
 cttgaacctg ggaggtggag gttgcgggtga gctgagatca caccactgta 1250
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<210> 373
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 373

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Phe | Leu | Gln | Asp | Pro | Ser | Phe | Phe | Thr | Met | Gly | Met | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Ile | Gly | Ala | Gly | Ala | Leu | Gly | Ala | Ala | Ala | Leu | Ala | Leu | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ala | Asn | Thr | Asp | Val | Phe | Leu | Ser | Lys | Pro | Gln | Lys | Ala | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Glu | Tyr | Leu | Glu | Asp | Ile | Asp | Leu | Lys | Thr | Leu | Glu | Lys | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Arg | Thr | Phe | Lys | Ala | Lys | Glu | Leu | Trp | Glu | Lys | Asn | Gly | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Ile | Met | Ala | Val | Arg | Arg | Pro | Gly | Cys | Phe | Leu | Cys | Arg | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Ala | Ala | Asp | Leu | Ser | Ser | Leu | Lys | Ser | Met | Leu | Asp | Gln | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Val | Pro | Leu | Tyr | Ala | Val | Val | Lys | Glu | His | Ile | Arg | Thr | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Lys | Asp | Phe | Gln | Pro | Tyr | Phe | Lys | Gly | Glu | Ile | Phe | Leu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Lys | Lys | Lys | Phe | Tyr | Gly | Pro | Gln | Arg | Arg | Lys | Met | Met | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Gly | Phe | Ile | Arg | Leu | Gly | Val | Trp | Tyr | Asn | Phe | Phe | Arg | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Trp | Asn | Gly | Gly | Phe | Ser | Gly | Asn | Leu | Glu | Gly | Glu | Gly | Phe | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Gly | Gly | Val | Phe | Val | Val | Gly | Ser | Gly | Lys | Gln | Gly | Ile | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Glu | His | Arg | Glu | Lys | Glu | Phe | Gly | Asp | Lys | Val | Asn | Leu | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ser | Val | Leu | Glu | Ala | Ala | Lys | Met | Ile | Lys | Pro | Gln | Thr | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |

Ser Glu Lys Lys

<210> 374
 <211> 744
 <212> DNA
 <213> Homo sapiens

<400> 374

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 caaagacgcc cgggccaggt gccccgtcgc aggtgcccct ggccggagat 100

gcggtaggag gggcgagcgc gagaagcccc ttcctcggcg ctgccaaccc 150
gccaccagc ccatggcgaa ccccgggctg gggctgcttc tggcgctggg 200
cctgccgttc ctgctggccc gctggggccg agcctggggg caaatacaga 250
ccacttctgc aaatgagaat agcactgttt tgccttcac caccagctcc 300
agctccgatg gcaacctgcg tccggaagcc atcactgcta tcatcggtgt 350
cttctccctc ttggctgcct tgctcctggc tgtggggctg gcaactgttg 400
tgcggaagct tcgggagaag cggcagacgg agggcaccta ccggcccagt 450
agcgaggagc agttctccca tgcagccgag gcccgggccc ctcaggactc 500
caaggagacg gtgcagggct gcctgcccac ctaggtcccc tctcctgcat 550
ctgtctccct tcattgctgt gtgaccttgg ggaaaggcag tgccctctct 600
gggcagtcag atccaccag tgcttaatag cagggaagaa ggtacttcaa 650
agactctgcc cctgagggtca agagaggatg gggctattca cttttatata 700
tttatataaa attagtagtg agatgtaaaa aaaaaaaaaa aaaa 744

<210> 375
<211> 123
<212> PRT
<213> Homo sapiens

<400> 375
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Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser
35 40 45
Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile
50 55 60
Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly
65 70 75
Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu
80 85 90
Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala
95 100 105
Glu Ala Arg Ala Pro Gln Asp Ser Lys Glu Thr Val Gln Gly Cys
110 115 120
Leu Pro Ile

<210> 376
<211> 713
<212> DNA
<213> Homo sapiens

<400> 376
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aacatttggg ttttgggatt ttaattttca aacacagcag aatgacattt 100
tttctgtcac tattattatt gttggtatgt gaagctattt ggagatccaa 150
ttcaggaagc aacacattgg agaatggcta ctttctatca agaaataaag 200
agaaccacag tcaaccaca caatcatctt tagaagacag tgtgactcct 250
accaaagctg tcaaaaccac aggcaagggc atagttaaag gacggaatct 300
tgactcaaga gggttaattc ttggtgctga agcctggggc aggggtgtaa 350
agaaaaacac ttagattcaa tgattgtaaa tttaaggcaa atacacatat 400
tagtattacc ttagtgtaat gtatccctgt catatataca ataagtgtaa 450
attataagta ccctatgcag ttggctggac agttctaaat tggactttat 500
taatttttaa aatcagtaac tgatttatca ctggctatgt gcttagatct 550
acaggagatc atataatttg atacaaataa aagaaaagtg ttctctcccc 600
ttacagaatt gacattttta atgcgataca gttagaatag gaaatatgac 650
attagaaagg aagaatgaca gggagaaagg aaagaaggga aaatgttgcc 700
aaggaaaaaa aaa 713

<210> 377
<211> 90
<212> PRT
<213> Homo sapiens

<400> 377
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20 25 30
Phe Leu Ser Arg Asn Lys Glu Asn His Ser Gln Pro Thr Gln Ser
35 40 45
Ser Leu Glu Asp Ser Val Thr Pro Thr Lys Ala Val Lys Thr Thr
50 55 60
Gly Lys Gly Ile Val Lys Gly Arg Asn Leu Asp Ser Arg Gly Leu
65 70 75
Ile Leu Gly Ala Glu Ala Trp Gly Arg Gly Val Lys Lys Asn Thr
80 85 90

<210> 378
<211> 3265
<212> DNA
<213> Homo sapiens

<400> 378
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aaaaaaaaaa aaaaa 3265

<210> 379

<211> 919

<212> PRT

<213> Homo sapiens

<400> 379

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Phe | Arg | Gly | Phe | Val | Phe | Leu | Leu | Val | Leu | Cys | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | His | Gln | Ser | Asn | Thr | Ser | Phe | Ile | Lys | Leu | Asn | Asn | Asn | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Phe | Glu | Asp | Ile | Val | Ile | Val | Ile | Asp | Pro | Ser | Val | Pro | Glu | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Lys | Ile | Ile | Glu | Gln | Ile | Glu | Asp | Met | Val | Thr | Thr | Ala | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Thr | Tyr | Leu | Phe | Glu | Ala | Thr | Glu | Lys | Arg | Phe | Phe | Phe | Lys | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Ser | Ile | Leu | Ile | Pro | Glu | Asn | Trp | Lys | Glu | Asn | Pro | Gln | Tyr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Arg | Pro | Lys | His | Glu | Asn | His | Lys | His | Ala | Asp | Val | Ile | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Pro | Pro | Thr | Leu | Pro | Gly | Arg | Asp | Glu | Pro | Tyr | Thr | Lys | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Phe | Thr | Glu | Cys | Gly | Glu | Lys | Gly | Glu | Tyr | Ile | His | Phe | Thr | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asp | Leu | Leu | Leu | Gly | Lys | Lys | Gln | Asn | Glu | Tyr | Gly | Pro | Pro | Gly |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Leu | Phe | Val | His | Glu | Trp | Ala | His | Leu | Arg | Trp | Gly | Val | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asp | Glu | Tyr | Asn | Glu | Asp | Gln | Pro | Phe | Tyr | Arg | Ala | Lys | Ser | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Lys | Ile | Glu | Ala | Thr | Arg | Cys | Ser | Ala | Gly | Ile | Ser | Gly | Arg | Asn |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Val | Tyr | Lys | Cys | Gln | Gly | Gly | Ser | Cys | Leu | Ser | Arg | Ala | Cys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Ile | Asp | Ser | Thr | Thr | Lys | Leu | Tyr | Gly | Lys | Asp | Cys | Gln | Phe |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Phe | Pro | Asp | Lys | Val | Gln | Thr | Glu | Lys | Ala | Ser | Ile | Met | Phe | Met |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Gln | Ser | Ile | Asp | Ser | Val | Val | Glu | Phe | Cys | Asn | Glu | Lys | Thr | His |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asn | Gln | Glu | Ala | Pro | Ser | Leu | Gln | Asn | Ile | Lys | Cys | Asn | Phe | Arg |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ser | Thr | Trp | Glu | Val | Ile | Ser | Asn | Ser | Glu | Asp | Phe | Lys | Asn | Thr |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ile | Pro | Met | Val | Thr 290 | Pro | Pro | Pro | Pro | Pro 295 | Val | Phe | Ser | Leu | Leu 300 |
| Lys | Ile | Ser | Gln | Arg 305 | Ile | Val | Cys | Leu | Val 310 | Leu | Asp | Lys | Ser | Gly 315 |
| Ser | Met | Gly | Gly | Lys 320 | Asp | Arg | Leu | Asn | Arg 325 | Met | Asn | Gln | Ala | Ala 330 |
| Lys | His | Phe | Leu | Leu 335 | Gln | Thr | Val | Glu | Asn 340 | Gly | Ser | Trp | Val | Gly 345 |
| Met | Val | His | Phe | Asp 350 | Ser | Thr | Ala | Thr | Ile 355 | Val | Asn | Lys | Leu | Ile 360 |
| Gln | Ile | Lys | Ser | Ser 365 | Asp | Glu | Arg | Asn | Thr 370 | Leu | Met | Ala | Gly | Leu 375 |
| Pro | Thr | Tyr | Pro | Leu 380 | Gly | Gly | Thr | Ser | Ile 385 | Cys | Ser | Gly | Ile | Lys 390 |
| Tyr | Ala | Phe | Gln | Val 395 | Ile | Gly | Glu | Leu | His 400 | Ser | Gln | Leu | Asp | Gly 405 |
| Ser | Glu | Val | Leu | Leu 410 | Leu | Thr | Asp | Gly | Glu 415 | Asp | Asn | Thr | Ala | Ser 420 |
| Ser | Cys | Ile | Asp | Glu 425 | Val | Lys | Gln | Ser | Gly 430 | Ala | Ile | Val | His | Phe 435 |
| Ile | Ala | Leu | Gly | Arg 440 | Ala | Ala | Asp | Glu | Ala 445 | Val | Ile | Glu | Met | Ser 450 |
| Lys | Ile | Thr | Gly | Gly 455 | Ser | His | Phe | Tyr | Val 460 | Ser | Asp | Glu | Ala | Gln 465 |
| Asn | Asn | Gly | Leu | Ile 470 | Asp | Ala | Phe | Gly | Ala 475 | Leu | Thr | Ser | Gly | Asn 480 |
| Thr | Asp | Leu | Ser | Gln 485 | Lys | Ser | Leu | Gln | Leu 490 | Glu | Ser | Lys | Gly | Leu 495 |
| Thr | Leu | Asn | Ser | Asn 500 | Ala | Trp | Met | Asn | Asp 505 | Thr | Val | Ile | Ile | Asp 510 |
| Ser | Thr | Val | Gly | Lys 515 | Asp | Thr | Phe | Phe | Leu 520 | Ile | Thr | Trp | Asn | Ser 525 |
| Leu | Pro | Pro | Ser | Ile 530 | Ser | Leu | Trp | Asp | Pro 535 | Ser | Gly | Thr | Ile | Met 540 |
| Glu | Asn | Phe | Thr | Val 545 | Asp | Ala | Thr | Ser | Lys 550 | Met | Ala | Tyr | Leu | Ser 555 |
| Ile | Pro | Gly | Thr | Ala 560 | Lys | Val | Gly | Thr | Trp 565 | Ala | Tyr | Asn | Leu | Gln 570 |
| Ala | Lys | Ala | Asn | Pro 575 | Glu | Thr | Leu | Thr | Ile 580 | Thr | Val | Thr | Ser | Arg 585 |
| Ala | Ala | Asn | Ser | Ser | Val | Pro | Pro | Ile | Thr | Val | Asn | Ala | Lys | Met |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|
| | | | | 590 | | | | | 595 | | | | | 600 |
| Asn | Lys | Asp | Val | Asn 605 | Ser | Phe | Pro | Ser | Pro 610 | Met | Ile | Val | Tyr | Ala 615 |
| Glu | Ile | Leu | Gln | Gly 620 | Tyr | Val | Pro | Val | Leu 625 | Gly | Ala | Asn | Val | Thr 630 |
| Ala | Phe | Ile | Glu | Ser 635 | Gln | Asn | Gly | His | Thr 640 | Glu | Val | Leu | Glu | Leu 645 |
| Leu | Asp | Asn | Gly | Ala 650 | Gly | Ala | Asp | Ser | Phe 655 | Lys | Asn | Asp | Gly | Val 660 |
| Tyr | Ser | Arg | Tyr | Phe 665 | Thr | Ala | Tyr | Thr | Glu 670 | Asn | Gly | Arg | Tyr | Ser 675 |
| Leu | Lys | Val | Arg | Ala 680 | His | Gly | Gly | Ala | Asn 685 | Thr | Ala | Arg | Leu | Lys 690 |
| Leu | Arg | Pro | Pro | Leu 695 | Asn | Arg | Ala | Ala | Tyr 700 | Ile | Pro | Gly | Trp | Val 705 |
| Val | Asn | Gly | Glu | Ile 710 | Glu | Ala | Asn | Pro | Pro 715 | Arg | Pro | Glu | Ile | Asp 720 |
| Glu | Asp | Thr | Gln | Thr 725 | Thr | Leu | Glu | Asp | Phe 730 | Ser | Arg | Thr | Ala | Ser 735 |
| Gly | Gly | Ala | Phe | Val 740 | Val | Ser | Gln | Val | Pro 745 | Ser | Leu | Pro | Leu | Pro 750 |
| Asp | Gln | Tyr | Pro | Pro 755 | Ser | Gln | Ile | Thr | Asp 760 | Leu | Asp | Ala | Thr | Val 765 |
| His | Glu | Asp | Lys | Ile 770 | Ile | Leu | Thr | Trp | Thr 775 | Ala | Pro | Gly | Asp | Asn 780 |
| Phe | Asp | Val | Gly | Lys 785 | Val | Gln | Arg | Tyr | Ile 790 | Ile | Arg | Ile | Ser | Ala 795 |
| Ser | Ile | Leu | Asp | Leu 800 | Arg | Asp | Ser | Phe | Asp 805 | Asp | Ala | Leu | Gln | Val 810 |
| Asn | Thr | Thr | Asp | Leu 815 | Ser | Pro | Lys | Glu | Ala 820 | Asn | Ser | Lys | Glu | Ser 825 |
| Phe | Ala | Phe | Lys | Pro 830 | Glu | Asn | Ile | Ser | Glu 835 | Glu | Asn | Ala | Thr | His 840 |
| Ile | Phe | Ile | Ala | Ile 845 | Lys | Ser | Ile | Asp | Lys 850 | Ser | Asn | Leu | Thr | Ser 855 |
| Lys | Val | Ser | Asn | Ile 860 | Ala | Gln | Val | Thr | Leu 865 | Phe | Ile | Pro | Gln | Ala 870 |
| Asn | Pro | Asp | Asp | Ile 875 | Asp | Pro | Thr | Pro | Thr 880 | Pro | Thr | Pro | Thr | Pro 885 |
| Thr | Pro | Asp | Lys | Ser 890 | His | Asn | Ser | Gly | Val 895 | Asn | Ile | Ser | Thr | Leu 900 |
| Val | Leu | Ser | Val | Ile | Gly | Ser | Val | Val | Ile | Val | Asn | Phe | Ile | Leu |

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<210> 380
<211> 3877
<212> DNA
<213> Homo sapiens
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| ctccttaggt | ggaaccctg | ggagtagagt | actgacagca | aagaccggga | 50 |
| aagaccatac | gtccccgggc | aggggtgaca | acagggtgtca | tctttttgat | 100 |
| ctcgtgtgtg | gctgccttcc | tatttcaagg | aaagacgcca | aggtaatttt | 150 |
| gaccagagg | agcaatgatg | tagccacctc | ctaaccttcc | cttcttgaac | 200 |
| ccccagttat | gccaggattt | actagagagt | gtcaactcaa | ccagcaagcg | 250 |
| gtccttctcg | cttaacttgt | ggttggagga | gagaaccttt | gtggggctgc | 300 |
| gttctcttag | cagtgtctcag | aagtgacttg | cctgaggggtg | gaccagaaga | 350 |
| aaggaaaggt | cccctcttgc | tgttggctgc | acatcaggaa | ggctgtgatg | 400 |
| ggaatgaagg | tgaaaacttg | gagatttcac | ttcagtcatt | gcttctgcct | 450 |
| gcaagatcat | cctttaaaag | tagagaagct | gctctgtgtg | gtggttaact | 500 |
| ccaagaggca | gaactcgttc | tagaagggaa | tggatgcaag | cagctccggg | 550 |
| ggccccaac | gcatgcttcc | tgtgggtctag | cccagggaag | cccttccgtg | 600 |
| ggggccccgg | ctttgaggga | tgccaccggt | tctggacgca | tggctgattc | 650 |
| ctgaatgatg | atggttcgcc | gggggctgct | tgcgtggatt | tcccgggtgg | 700 |
| tggttttgct | ggtgctcctc | tgctgtgcta | tctctgtcct | gtacatgttg | 750 |
| gcctgcaccc | caaaagggtga | cgaggagcag | ctggcactgc | ccagggccaa | 800 |
| cagccccacg | gggaaggagg | ggtaccaggc | cgtccttcag | gagtgggagg | 850 |
| agcagcaccg | caactacgtg | agcagcctga | agcggcagat | cgcacagctc | 900 |
| aaggaggagc | tgcaggagag | gagtgagcag | ctcaggaatg | ggcagtacca | 950 |
| agccagcgat | gctgctggcc | tgggtctgga | caggagcccc | ccagagaaaa | 1000 |
| cccaggccga | cctcctggcc | ttcctgcact | cgcagggtgga | caaggcagag | 1050 |
| gtgaatgctg | gcgtcaagct | ggccacagag | tatgcagcag | tgcctttcga | 1100 |
| tagctttact | ctacagaagg | tgtaccagct | ggagactggc | cttaccgcc | 1150 |
| accccgagga | gaagcctgtg | aggaaggaca | agcgggatga | gttgggtggaa | 1200 |
| gccattgaat | cagccttgga | gacctgaac | aatcctgcag | agaacagccc | 1250 |
| caatcacctg | ccttacacgg | cctctgattt | catagaaggg | atctaccgaa | 1300 |

| Parameter | Value | Unit |
|--------------------|----------------------|--------|
| Temperature | 25.0 | °C |
| Pressure | 1.0 | atm |
| Flow rate | 1.0 | L/min |
| Concentration | 0.1 | mol/L |
| pH | 7.0 | |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume | 10 | μL |
| Column | C18 | |
| Mobile phase | Water/Acetonitrile | |
| Gradient | 0-100% ACN in 10 min | |
| Flow rate | 1.0 | mL/min |
| Temperature | 30 | °C |
| Wavelength | 254 | nm |
| Scan rate | 10 | nm/min |
| Integration time | 10 | s |
| Resolution | 0.5 | nm |
| Detector | Photodiode array | |
| Injection volume</ | | |

cagaaagggg caaagggaca ttgtatgagc tcaccttcaa aggggaccac 1350
aaacacgaat tcaaacggct catcttattt cgaccattca gccccatcat 1400
gaaagtgaaa aatgaaaagc tcaacatggc caacacgctt atcaatgtta 1450
tcgtgcctct agcaaaaagg gtggacaagt tccggcagtt catgcagaat 1500
ttcagggaga tgtgcattga gcaggatggg agagtccatc tcaactgttg 1550
ttactttggg aaagaagaaa taaatgaagt caaaggaata cttgaaaaca 1600
cttccaaagc tgccaacttc aggaacttta cttcatcca gctgaatgga 1650
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tataagccta atgggtgtga ggttttgatg gtgtttacaa tacactgaga 2550
cctgttggtt tgtgtgtcct ttgaaatatt catgatttaa gagcagtttt 2600
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ctgtctccgt ttttttcttt tatttaaaaa tgcacttttt ttcccttggtg 2900

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Gln | Gln | Leu | Val | Ile | Lys | Lys | Glu | Thr | Gly | Phe | Trp | Arg | Asp | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Phe | Gly | Phe | Gly | Met | Thr | Cys | Gln | Tyr | Arg | Ser | Asp | Phe | Ile | Asn | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ile | Gly | Gly | Phe | Asp | Leu | Asp | Ile | Lys | Gly | Trp | Gly | Gly | Glu | Asp | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Val | His | Leu | Tyr | Arg | Lys | Tyr | Leu | His | Ser | Asn | Leu | Ile | Val | Val | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Arg | Thr | Pro | Val | Arg | Gly | Leu | Phe | His | Leu | Trp | His | Glu | Lys | Arg | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Cys | Met | Asp | Glu | Leu | Thr | Pro | Glu | Gln | Tyr | Lys | Met | Cys | Met | Gln | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ser | Lys | Ala | Met | Asn | Glu | Ala | Ser | His | Gly | Gln | Leu | Gly | Met | Leu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Val | Phe | Arg | His | Glu | Ile | Glu | Ala | His | Leu | Arg | Lys | Gln | Lys | Gln | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Lys | Thr | Ser | Ser | Lys | Lys | Thr | | | | | | | | | |
| | | | | 530 | | | | | | | | | | | |

<210> 382
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 382
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<210> 383
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 383
 gcgaaggatga gcctctatct cgtgcc 26

<210> 384
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 384
 cagcctacac gtattgagg 19

<210> 385
 <211> 48
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 385

cagtcagtac aatcctggca taatatacgg ccaccatgat gcagtccc 48

<210> 386

<211> 1346

<212> DNA

<213> Homo sapiens

<400> 386

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gaacagctct gggagataaa gcatatgcct gggataccaa tgaagaatac 150
ctcttcaaag cgatggtagc tttctccatg agaaaagttc ccaacagaga 200
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gatcccctgg acatgaaggg gggcatatta atgatgcctt catgacagag 650
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tgtgcttgaa agtgaaaagc aatcaattat accaccaac accactgaaa 850
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tttagaaata agatcaggca tatgtatata ttttcacact tcaaagacct 1000
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tggaattact catatacagg gtggaatttt atcctgttat cacaccaaca 1200
gttgattata tattttctga atatcagccc ctaataggac aattctattt 1250

gttgaccatt tctacaattt gtaaaagtcc aatctgtgct aacttaataa 1300

agtaataatc atctcttttt aaaaaaaaaa aaaaaaaaaa aaaaaa 1346

<210> 387

<211> 212

<212> PRT

<213> Homo sapiens

<400> 387

Met Leu Trp Leu Leu Phe Phe Leu Val Thr Ala Ile His Ala Glu
1 5 10 15

Leu Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser
20 25 30

Ile Arg Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn
35 40 45

Glu Glu Tyr Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys
50 55 60

Val Pro Asn Arg Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys
65 70 75

Asn Val Thr Gln Arg Val Ser Phe Trp Phe Val Val Thr Asp Pro
80 85 90

Ser Lys Asn His Thr Leu Pro Ala Val Glu Val Gln Ser Ala Ile
95 100 105

Arg Met Asn Lys Asn Arg Ile Asn Asn Ala Phe Phe Leu Asn Asp
110 115 120

Gln Thr Leu Glu Phe Leu Lys Ile Pro Ser Thr Leu Ala Pro Pro
125 130 135

Met Asp Pro Ser Val Pro Ile Trp Ile Ile Ile Phe Gly Val Ile
140 145 150

Phe Cys Ile Ile Ile Val Ala Ile Ala Leu Leu Ile Leu Ser Gly
155 160 165

Ile Trp Gln Arg Arg Arg Lys Asn Lys Glu Pro Ser Glu Val Asp
170 175 180

Asp Ala Glu Asp Lys Cys Glu Asn Met Ile Thr Ile Glu Asn Gly
185 190 195

Ile Pro Ser Asp Pro Leu Asp Met Lys Gly Gly Ile Leu Met Met
200 205 210

Pro Ser

<210> 388

<211> 1371

<212> DNA

<213> Homo sapiens

<400> 388

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 gccaaaggctg ggtttccctc atgtatggca agagctctac tcgtgcggtg 150
 cttcttctcc ttggcataca gctcacagct ctttggccta tagcagctgt 200
 ggaaatttat acctcccggg tgctggaggc tgttaatggg acagatgctc 250
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 gtgacctgga attttctgccc tctagacggg ggacctgagc agtttgtatt 350
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 ggggtgtcttg ggatgggaat cctgagcggg acgatgcctc catccttctc 450
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 cccacctgat gttgatgggg tgatagggga gatccggctc agcgtcgtgc 550
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 gcctgtgcac tgatgatcat aatagtaatt gtagtgggtcc tcttccagca 650
 ttaccggaaa aagcgatggg ccgaaagagc tcataaagtg gtggagataa 700
 aatcaaaaga agaggaaagg ctcaaccaag agaaaaaggc ctctgtttat 750
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 gaacaagaac cctagtattt cttgaagtta atggaaactt ttctttggct 850
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 gtcatacaca gcctcattat taaggtctta ttttaatttca gagtgtaaat 1000
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 ccacattctc aattaaaagg tgagctaagc ctccctcggg tttctgatta 1250
 acagtaaadc ctaaattcaa actgttaaat gacattttta tttttatgtc 1300
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<210> 389

<211> 215

<212> PRT

<213> Homo sapiens

<400> 389

| | | | | | | | | | | | | | | |
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| Met | Tyr | Gly | Lys | Ser | Ser | Thr | Arg | Ala | Val | Leu | Leu | Leu | Leu | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

<210> 392
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 392
gagaggactg cgggagtttg ggacctttgt gcagacgtgc tcatg 45

<210> 393
<211> 471
<212> DNA
<213> Homo sapiens

<400> 393
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atccgacaac agctgctcca gctgacacgt atccagctac tggctcctgct 150
gatgatgaag cccctgatgc tgaaaccact gctgctgcaa ccaactgcgac 200
cactgctgct cctaccactg caaccaccgc tgcttctacc actgctcgta 250
aagacattcc agttttaccc aaatggggtg gggatctccc gaatggtaga 300
gtgtgtccct gagatggaat cagcttgagt cttctgcaat tggtcacaac 350
tattcatgct tcctgtgatt tcatccaact acttaccttg cctacgatat 400
cccctttatc tctaatacgt ttattttctt tcaaataaaa aataactatg 450
agcaacataa aaaaaaaaaa a 471

<210> 394
<211> 90
<212> PRT
<213> Homo sapiens

<400> 394
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20 25 30
Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
35 40 45
Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
50 55 60
Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
65 70 75
Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
80 85 90

<210> 395
<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 395
gctccctgat cttcatgtca ccacc 25

<210> 396
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 396
cagggacaca ctctaaccatt cgggag 26

<210> 397
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 397
ccatctttct ggtctctgcc cagaatccga caacagctgc tc 42

<210> 398
<211> 907
<212> DNA
<213> Homo sapiens

<400> 398
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gggcaggacc ccatagggga atgctacctc ctgcccttcc acctgccctg 150
gtgttcacgg tggcctggtc cctccttgcc gagagagtgt cctgggtcag 200
ggacgcagag gacgctcaca gactccagcc ctttgttacc gagaggacac 250
ttggcaaggt ccagcgatgg tccggagtcc acacacagac tggcggcagg 300
gcaggagggg gacagttctg ttgtgcttgg ttggacagta agagggtctt 350
ggccagtcca ggggtggggg cggaactc cataaagaac cagagggtct 400
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 cgccccgtga ggccccctgtg cagggaggag ctgcctgttc actgggatca 700
 gccagggcgc cgggccccac ttctgagcac agagcagaga cagacgcagg 750
 cggggacaaa ggcagaggat gtagcccat tggggagggg tggaggaagg 800
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 atttcaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 893

<210> 401
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 401
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 Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala
 20 25 30
 Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu
 35 40 45
 Gly Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu
 50 55 60
 Thr Lys Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu
 65 70 75
 Leu Leu Gly Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu
 80 85 90
 Leu Arg Ala Ser Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu
 95 100 105
 Gln Leu Gln Ala Glu Ala Thr Ala Glu Val Leu Gly Glu Val Ala
 110 115 120
 Gln Ala Gln Lys Val Leu Arg Asp Ser Val Gln Arg Leu Glu Val
 125 130 135
 Gln Leu Arg Ser Ala Trp Leu Gly Pro Ala Tyr Arg Glu Phe Glu
 140 145 150
 Val Leu Lys Ala His Ala Asp Lys Gln Ser His Ile Leu Trp Ala
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 Leu Thr Gly His Val Gln Arg Gln Arg Arg Glu Met Val Ala Gln
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Leu Pro Ala

<210> 402
 <211> 1915
 <212> DNA
 <213> Homo sapiens

<400> 402

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 aaggatggag atctgaagac tcaaattgaa aagctctgga cagaagtcaa 200
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 aaaagaacct acattttattt tgcttttagca tccttactct caccttttat 1450
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 cactttgcaa actttaacta cacatgcttg gaattaagtt ttagctgttt 1850
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 aaaaaaaaaa aaaaa 1915

<210> 403

<211> 206

<212> PRT

<213> Homo sapiens

<400> 403

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Gln | Gln | Ala | Cys | Pro | Arg | Ala | Met | Ala | Lys | Asn | Gly | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Val | Ile | Cys | Ile | Leu | Val | Ile | Thr | Leu | Leu | Leu | Asp | Gln | Thr | Thr | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ser | His | Thr | Ser | Arg | Leu | Lys | Ala | Arg | Lys | His | Ser | Lys | Arg | Arg | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Arg | Asp | Lys | Asp | Gly | Asp | Leu | Lys | Thr | Gln | Ile | Glu | Lys | Leu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Trp | Thr | Glu | Val | Asn | Ala | Leu | Lys | Glu | Ile | Gln | Ala | Leu | Gln | Thr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Cys | Leu | Arg | Gly | Thr | Lys | Val | His | Lys | Lys | Cys | Tyr | Leu | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Glu | Gly | Leu | Lys | His | Phe | His | Glu | Ala | Asn | Glu | Asp | Cys | Ile | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ser | Lys | Gly | Gly | Ile | Leu | Val | Ile | Pro | Arg | Asn | Ser | Asp | Glu | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | Ala | Leu | Gln | Asp | Tyr | Gly | Lys | Arg | Ser | Leu | Pro | Gly | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asp | Phe | Trp | Leu | Gly | Ile | Asn | Asp | Met | Val | Thr | Glu | Gly | Lys | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Val | Asp | Val | Asn | Gly | Ile | Ala | Ile | Ser | Phe | Leu | Asn | Trp | Asp | Arg | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 155 | | 160 | | 165 |
| Ala Gln Pro Asn Gly Gly Lys Arg Glu Asn Cys Val Leu Phe Ser | | | | | |
| | 170 | | 175 | | 180 |
| Gln Ser Ala Gln Gly Lys Trp Ser Asp Glu Ala Cys Arg Ser Ser | | | | | |
| | 185 | | 190 | | 195 |
| Lys Arg Tyr Ile Cys Glu Phe Thr Ile Pro Lys | | | | | |
| | 200 | | 205 | | |

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 404
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<210> 405
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<220>
 <223> Synthetic oligonucleotide probe

<400> 405
 ctcttgctgc tgcgacaggc ctc 23

<210> 406
 <211> 46
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 406
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<210> 407
 <211> 570
 <212> DNA
 <213> Homo sapiens

<400> 407
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 ggctctgcgt ggccctgtcc tgcagctccg ctgctgcttt cttagtgggc 150
 tcggccaagc ctgtggccca gcctgtcgct gcgctggagt cggcggcgga 200
 ggccggggcc gggaccctgg ccaaccccct cggcaccctc aaccgctga 250
 agctcctgct gaggagcctg ggcatccccg tgaaccacct catagagggc 300
 tcccagaagt gtgtggctga gctgggtccc caggccgtgg gggccgtgaa 350

ggccctgaag gccctgctgg gggccctgac agtgtttggc tgagccgaga 400
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 ataaacgtgg ttaagagcaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 550
 aaaaaaaaaa aaaaaaaaaa 570

<210> 408
 <211> 104
 <212> PRT
 <213> Homo sapiens

<400> 408
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 Gln Pro Val Ala Ala Leu Glu Ser Ala Ala Glu Ala Gly Ala Gly
 35 40 45
 Thr Leu Ala Asn Pro Leu Gly Thr Leu Asn Pro Leu Lys Leu Leu
 50 55 60
 Leu Ser Ser Leu Gly Ile Pro Val Asn His Leu Ile Glu Gly Ser
 65 70 75
 Gln Lys Cys Val Ala Glu Leu Gly Pro Gln Ala Val Gly Ala Val
 80 85 90
 Lys Ala Leu Lys Ala Leu Leu Gly Ala Leu Thr Val Phe Gly
 95 100

<210> 409
 <211> 2089
 <212> DNA
 <213> Homo sapiens

<400> 409
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 ggccccagct cctcagtcgc cagagacccc agcccctcag aaccagacca 200
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 gcagcagctt gccaaaggaga cttcaaactt cggattcagc ctgctgcaa 350
 agatctccat gaggcacgat ggcaacatgg tcttctctcc atttggcatg 400
 tccttggcca tgacaggctt gatgctgggg gccacagggc cgactgaaac 450
 ccagatcaag agagggtccc acttgaggc cctgaagccc accaagccc 500

aataaacccc agcaggcaaa aaaaaaaaaa aaaaaa 636

<210> 412

<211> 151

<212> PRT

<213> Homo sapiens

<400> 412

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Gln Val Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp
35 40 45
Gly Ala Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val
50 55 60
Val Leu Phe Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu
65 70 75
Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys
80 85 90
Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro
95 100 105
Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp
110 115 120
Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn His Gln
125 130 135
Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His Pro
140 145 150

Gln

<210> 413

<211> 1176

<212> DNA

<213> Homo sapiens

<400> 413

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caatgaacca actcagcttc ctgctgtttc tcatagcgac caccagagga 150
tggagtacag atgaggctaa tacttacttc aaggaatgga cctgttcttc 200
gtctccatct ctgcccagaa gctgcaagga aatcaaagac gaatgtccta 250
gtgcatttga tggcctgtat tttctccgca ctgagaatgg tgttatctac 300
cagaccttct gtgacatgac ctctgggggt ggcggctgga ccctggtggc 350
cagcgtgcat gagaatgaca tgcgtgggaa gtgcacggtg ggcgatcgct 400

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Thr His Asn Ser | Ser Val Thr Ser Ala | Ala Ser Ser Val Thr | Ile | | |
| | 140 | 145 | 150 | | |
| Thr Thr Thr Met | His Ser Glu Ala Lys | Lys Gly Ser Lys Phe | Asp | | |
| | 155 | 160 | 165 | | |
| Thr Gly Ser Phe | Val Gly Gly Ile Val | Leu Thr Leu Gly Val | Leu | | |
| | 170 | 175 | 180 | | |
| Ser Ile Leu Tyr | Ile Gly Cys Lys Met | Tyr Tyr Ser Arg Arg | Gly | | |
| | 185 | 190 | 195 | | |
| Ile Arg Tyr Arg | Thr Ile Asp Glu His | Asp Ala Ile Ile | | | |
| | 200 | 205 | | | |

<210> 417

<211> 1728

<212> DNA

<213> Homo sapiens

<400> 417

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gcgatggcga ccctgtgggg aggcccttctt cggcttggct ccttgctcag 150
cctgtcgtgc ctggcgcttt ccgtgctgct gctggcgag ctgtcagacg 200
ccgccaagaa tttcgaggat gtcagatgta aatgtatctg ccctccctat 250
aaagaaaatt ctgggcatat ttataataag aacatatctc agaaagattg 300
tgattgcctt catgttgttg agcccatgcc tgtgcggggg cctgatgtag 350
aagcatactg tctacgctgt gaatgcaaat atgaagaaag aagctctgtc 400
acaatcaagg ttaccattat aatttatctc tccatttttg gccttctact 450
tctgtacatg gtatatctta ctctggttga gccatactg aagaggcgcc 500
tctttggaca tgcacagttg atacagagtg atgatgatat tggggatcac 550
cagccttttg caaatgcaca cgatgtgcta gcccgcctcc gcagtcgagc 600
caacgtgctg aacaaggtag aatatgcaca gcagcgctgg aagcttcaag 650
tccaagagca gcgaaagtct gtctttgacc ggcatgttgt cctcagctaa 700
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aaatctgcct gtaaattatc ttgaagtcct ttacctggaa caagcactct 1000

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<210> 418

<211> 198

<212> PRT

<213> Homo sapiens

<400> 418

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Leu | Trp | Gly | Gly | Leu | Leu | Arg | Leu | Gly | Ser | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Leu | Ser | Cys | Leu | Ala | Leu | Ser | Val | Leu | Leu | Leu | Ala | Gln | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ser | Asp | Ala | Ala | Lys | Asn | Phe | Glu | Asp | Val | Arg | Cys | Lys | Cys | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Cys | Pro | Pro | Tyr | Lys | Glu | Asn | Ser | Gly | His | Ile | Tyr | Asn | Lys | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ile | Ser | Gln | Lys | Asp | Cys | Asp | Cys | Leu | His | Val | Val | Glu | Pro | Met |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Val | Arg | Gly | Pro | Asp | Val | Glu | Ala | Tyr | Cys | Leu | Arg | Cys | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Cys | Lys | Tyr | Glu | Glu | Arg | Ser | Ser | Val | Thr | Ile | Lys | Val | Thr | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Ile | Tyr | Leu | Ser | Ile | Leu | Gly | Leu | Leu | Leu | Leu | Tyr | Met | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Tyr | Leu | Thr | Leu | Val | Glu | Pro | Ile | Leu | Lys | Arg | Arg | Leu | Phe | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ala | Gln | Leu | Ile | Gln | Ser | Asp | Asp | Asp | Ile | Gly | Asp | His | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Phe | Ala | Asn | Ala | His | Asp | Val | Leu | Ala | Arg | Ser | Arg | Ser | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Asn | Val | Leu | Asn | Lys | Val | Glu | Tyr | Ala | Gln | Gln | Arg | Trp | Lys |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Gln | Val | Gln | Glu | Gln | Arg | Lys | Ser | Val | Phe | Asp | Arg | His | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Val | Leu | Ser | | | | | | | | | | | | |

<210> 419
 <211> 681
 <212> DNA
 <213> Homo sapiens

<400> 419
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 aaaattgggc cgatttccac ctatgatgca tcatcaccag gcaccctcag 200
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 aagagggtctg atggggcaga ttattccaat ctacggtttt gggatttttt 350
 tatatatact gtacattcta tttaaggtaa gtagaatcat cctaatacata 400
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 aacttcttat agttcataaa attatttcaa atccatcatc tctttaaatc 500
 ctgcctcctc ttcatgaggt acttaggata gccattattt cagtttcaca 550
 taagaatgtt tactcaatgt ttaagtgttt tgccccaaaa ttcacaacta 600
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 gagtgataca attcaatgca ctcccctgcc a 681

<210> 420
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 420
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 20 25 30
 Gly Lys Arg Gln Glu Pro Pro Pro Thr Pro Glu Gly Lys Leu Gly
 35 40 45

Arg Phe Pro Pro Met Met His His His Gln Ala Pro Ser Asp Gly
50 55 60

Gln Thr Pro Gly Ala Arg Phe Gln Arg Ser His Leu Ala Glu Ala
65 70 75

Phe Ala Lys Ala Lys Gly Ser Gly Gly Gly Ala Gly Gly Gly Gly
80 85 90

Ser Gly Arg Gly Leu Met Gly Gln Ile Ile Pro Ile Tyr Gly Phe
95 100 105

Gly Ile Phe Leu Tyr Ile Leu Tyr Ile Leu Phe Lys Val Ser Arg
110 115 120

Ile Ile Leu Ile Ile Leu His Gln
125

<210> 421
<211> 1630
<212> DNA
<213> Homo sapiens

<400> 421
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aactcatcct gctgccagtg ttactggatt attccttggg cctgaatgac 150
ttgaatgttt ccccgccctga gctaacagtc catgtgggtg attcagctct 200
gatgggatgt gttttccaga gcacagaaga caaatgtata ttcaagatag 250
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gccc aaagag ctcatggtcc atgtgggtgg attgattcag atgggatgtg 550
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ccctgttctg atattgatcg tgaagaagac ctgtggaaat aagagttcag 1000

| | | | | | |
|------------|-------------|------------|------------|------------|------|
| tgaattctac | agtcttggtg | aagaacacga | agaagactaa | tccagagata | 1050 |
| aaagaaaaac | cctgccattt | tgaaagatgt | gaaggggaga | aacacattta | 1100 |
| ctccccaata | attgtacggg | aggtgatcga | ggaagaagaa | ccaagtgaaa | 1150 |
| aatcagaggc | cacctacatg | accatgcacc | cagtttggcc | ttctctgagg | 1200 |
| tcagatcgga | acaactcact | tgaaaaaaag | tcaggtgggg | gaatgccaaa | 1250 |
| aacacagcaa | gcctttttgag | agaatggag | agtcccttca | tctcagcagc | 1300 |
| ggtggagact | ctctcctgtg | tgtgtcctgg | gccactctac | cagtgatttc | 1350 |
| agactcccg | tctcccagct | gtcctcctgt | ctcattgttt | ggtcaataca | 1400 |
| ctgaagatgg | agaatttgga | gcctggcaga | gagactggac | agctctggag | 1450 |
| gaacaggcct | gctgagggga | ggggagcatg | gacttggcct | ctggagtggg | 1500 |
| acactggccc | tggaaccag | gctgagctga | gtggcctcaa | acccccggtt | 1550 |
| ggatcagacc | ctcctgtggg | cagggttctt | agtggatgag | ttactgggaa | 1600 |
| gaatcagaga | taaaaaccaa | cccaaataca | 1630 | | |

<210> 422

<211> 394

<212> PRT

<213> Homo sapiens

<400> 422

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Cys | Pro | Leu | Lys | Leu | Ile | Leu | Leu | Pro | Val | Leu | Leu | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

Tyr Ser Leu Gly Leu Asn Asp Leu Asn Val Ser Pro Pro Glu Leu
20 25 30

Thr Val His Val Gly Asp Ser Ala Leu Met Gly Cys Val Phe Gln
35 40 45

Ser Thr Glu Asp Lys Cys Ile Phe Lys Ile Asp Trp Thr Leu Ser
50 55 60

Pro Gly Glu His Ala Lys Asp Glu Tyr Val Leu Tyr Tyr Tyr Ser
65 70 75

Asn Leu Ser Val Pro Ile Gly Arg Phe Gln Asn Arg Val His Leu
80 85 90

Met Gly Asp Ile Leu Cys Asn Asp Gly Ser Leu Leu Leu Gln Asp
95 100 105

Val Gln Glu Ala Asp Gln Gly Thr Tyr Ile Cys Glu Ile Arg Leu
110 115 120

Lys Gly Glu Ser Gln Val Phe Lys Lys Ala Val Val Leu His Val
125 130 135

Leu Pro Glu Glu Pro Lys Glu Leu Met Val His Val Gly Gly Leu
140 145 150

Ile Gln Met Gly Cys Val Phe Gln Ser Thr Glu Val Lys His Val

| | 155 | 160 | 165 |
|---|-----|-----|-----|
| Thr Lys Val Glu Trp Ile Phe Ser Gly Arg Arg Ala Lys Glu Glu | 170 | 175 | 180 |
| Ile Val Phe Arg Tyr Tyr His Lys Leu Arg Met Ser Val Glu Tyr | 185 | 190 | 195 |
| Ser Gln Ser Trp Gly His Phe Gln Asn Arg Val Asn Leu Val Gly | 200 | 205 | 210 |
| Asp Ile Phe Arg Asn Asp Gly Ser Ile Met Leu Gln Gly Val Arg | 215 | 220 | 225 |
| Glu Ser Asp Gly Gly Asn Tyr Thr Cys Ser Ile His Leu Gly Asn | 230 | 235 | 240 |
| Leu Val Phe Lys Lys Thr Ile Val Leu His Val Ser Pro Glu Glu | 245 | 250 | 255 |
| Pro Arg Thr Leu Val Thr Pro Ala Ala Leu Arg Pro Leu Val Leu | 260 | 265 | 270 |
| Gly Gly Asn Gln Leu Val Ile Ile Val Gly Ile Val Cys Ala Thr | 275 | 280 | 285 |
| Ile Leu Leu Leu Pro Val Leu Ile Leu Ile Val Lys Lys Thr Cys | 290 | 295 | 300 |
| Gly Asn Lys Ser Ser Val Asn Ser Thr Val Leu Val Lys Asn Thr | 305 | 310 | 315 |
| Lys Lys Thr Asn Pro Glu Ile Lys Glu Lys Pro Cys His Phe Glu | 320 | 325 | 330 |
| Arg Cys Glu Gly Glu Lys His Ile Tyr Ser Pro Ile Ile Val Arg | 335 | 340 | 345 |
| Glu Val Ile Glu Glu Glu Glu Pro Ser Glu Lys Ser Glu Ala Thr | 350 | 355 | 360 |
| Tyr Met Thr Met His Pro Val Trp Pro Ser Leu Arg Ser Asp Arg | 365 | 370 | 375 |
| Asn Asn Ser Leu Glu Lys Lys Ser Gly Gly Gly Met Pro Lys Thr | 380 | 385 | 390 |
| Gln Gln Ala Phe | | | |

<210> 423

<211> 963

<212> DNA

<213> Homo sapiens

<400> 423

ctatgaagaa gcttcctgga aaacaataag caaaggaaaa caaatgtgtc 50

ccatctcaca tggttctacc ctactaaaga caggaagatc ataaactgac 100

agatactgaa attgtaagag ttggaaacta cattttgcaa agtcattgaa 150

ctctgagctc agttgcagta ctcgggaagc catgcaggat gaagatggat 200

acatcacctt aaatattaaa actcggaac cagctctcgt ctccgttggc 250
 cctgcatcct cctcctggtg gcgtgtgatg gctttgattc tgctgatcct 300
 gtgcgtgggg atggttgtcg ggctgggtggc tctggggatt tggctctgtca 350
 tgcagcgcaa ttacctacaa gatgagaatg aaaatcgcac aggaactctg 400
 caacaattag caaagcgctt ctgtcaatat gtggtaaaac aatcagaact 450
 aaagggcact ttcaaaggtc ataaatgcag cccctgtgac acaaactgga 500
 gatattatgg agatagctgc tatgggttct tcaggcacia cttaacatgg 550
 gaagagagta agcagtactg cactgacatg aatgctactc tcctgaagat 600
 tgacaaccgg aacattgtgg agtacatcaa agccaggact catttaattc 650
 gttgggtcgg attatctcgc cagaagtcga atgaggtctg gaagtgggag 700
 gatggctcgg ttatctcaga aaatatgttt gagtttttgg aagatggaaa 750
 aggaaatatg aattgtgctt attttcataa tgggaaaatg caccctacct 800
 tctgtgagaa caaacattat ttaatgtgtg agaggaaggc tggcatgacc 850
 aaggtggacc aactacctta atgcaaagag gtggacagga taacacagat 900
 aagggtctta ttgtacaata aaagatatgt atgaatgcat cagtagctga 950
 aaaaaaaaaaaa aaa 963

<210> 424

<211> 229

<212> PRT

<213> Homo sapiens

<400> 424

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Asp | Glu | Asp | Gly | Tyr | Ile | Thr | Leu | Asn | Ile | Lys | Thr | Arg |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Lys | Pro | Ala | Leu | Val | Ser | Val | Gly | Pro | Ala | Ser | Ser | Ser | Trp | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Val | Met | Ala | Leu | Ile | Leu | Leu | Ile | Leu | Cys | Val | Gly | Met | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Gly | Leu | Val | Ala | Leu | Gly | Ile | Trp | Ser | Val | Met | Gln | Arg | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Leu | Gln | Asp | Glu | Asn | Glu | Asn | Arg | Thr | Gly | Thr | Leu | Gln | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Ala | Lys | Arg | Phe | Cys | Gln | Tyr | Val | Val | Lys | Gln | Ser | Glu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Gly | Thr | Phe | Lys | Gly | His | Lys | Cys | Ser | Pro | Cys | Asp | Thr | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Trp | Arg | Tyr | Tyr | Gly | Asp | Ser | Cys | Tyr | Gly | Phe | Phe | Arg | His | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Thr | Trp | Glu | Glu | Ser | Lys | Gln | Tyr | Cys | Thr | Asp | Met | Asn | Ala |

<400> 428
ccaccaatgg cagccccacc t 21

<210> 429
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 429
gactgccctc cctgcca 17

<210> 430
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 430
caaaaagcct ggaagtcttc aaag 24

<210> 431
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 431
cagctggact gcaggtgcta 20

<210> 432
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 432
cagtgagcac agcaagtgtc ct 22

<210> 433
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 433
ggccacctcc ttgagtcttc agttccct 28

<210> 434
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 434
 caactactgg ctaaagctgg tgaa 24

 <210> 435
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 435
 cctttctgta taggtgatac ccaatga 27

 <210> 436
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 436
 tggccatccc taccagaggc aaaa 24

 <210> 437
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 437
 ctgaagacga cgcggtattac ta 22

 <210> 438
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 438
 ggcagaaatg ggaggcaga 19

 <210> 439
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 439
 tgctctgttg gctacggctt tagtccttag 30

 <210> 440
 <211> 22

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 440
 agcagcagcc atgtagaatg aa 22

 <210> 441
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 441
 aatacgaaca gtgcacgctg at 22

 <210> 442
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 442
 tccagagagc caagcacggc aga 23

 <210> 443
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 443
 tctagccagc ttggctccaa ta 22

 <210> 444
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 444
 cctggctcta gcaccaactc ata 23

 <210> 445
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 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 445
 tcagtggccc taaggagatg ggcct 25

<210> 446
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 446
 caggatacag tgggaatctt gaga 24

 <210> 447
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 447
 cctgaagggc ttggagctta gt 22

 <210> 448
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 448
 tctttggcca tttcccatgg ctca 24

 <210> 449
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 449
 cccatggcga ggaggaat 18

 <210> 450
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 450
 tgcgtacgtg tgccttcag 19

 <210> 451
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 451
 cagcacccca ggcagtctgt gtgt 24

 <210> 452
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 452
 aacgtgctac acgaccagtg tact 24

 <210> 453
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 453
 cacagcatat tcagatgact aaatcca 27

 <210> 454
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 454
 ttgttttagtt ctccaccgtg tctccacaga a 31

 <210> 455
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 455
 tgtcagaatg caacctggct t 21

 <210> 456
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 456
 tgatgtgcct ggctcagaac 20

 <210> 457
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 457
 tgcacctaga tgtccccagc accc 24

 <210> 458
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 458
 aagatgcgcc aggcttctta 20

 <210> 459
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 459
 ctctgtacg gtctgctcac ttat 24

 <210> 460
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 460
 tggctgtcag tccagtgtgc atgg 24

 <210> 461
 <211> 29
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 461
 gcatagggat agataagatc ctgctttat 29

 <210> 462
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 462
 caaattaaag taccoatcag gagagaa 27

 <210> 463
 <211> 37

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 463
 aagttgctaa atatatacat tatctgcgcc aagtcca 37

 <210> 464
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 464
 gtgctgcccc caattcatga 20

 <210> 465
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 465
 gtccttggtga tgggtctgaa ttatat 26

 <210> 466
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 466
 actctctgca cccacagtc accactatct c 31

 <210> 467
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 467
 ctgaggaacc agccatgtct ct 22

 <210> 468
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 468
 gaccagatgc aggtacagga tga 23

<210> 469
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 469
 ctgccccttc agtgatgcca acctt 25

 <210> 470
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 470
 ggggtggaggc tcactgagta ga 22

 <210> 471
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 471
 caatacaggt aatgaaactc tgcttctt 28

 <210> 472
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 472
 tcctcttaag cataggccat tttctcagtt tagaca 36

 <210> 473
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 473
 ggtggtcttg cttggtctca c 21

 <210> 474
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

<400> 474
 ccgtcgttca gcaacatgac 20

 <210> 475
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 475
 accgcctacc gctgtgcca 20

 <210> 476
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 476
 cagtaaaacc acaggctgga ttt 23

 <210> 477
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 477
 cctgagagca agaaggttga gaat 24

 <210> 478
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 478
 tagacaggga ccatggcccg ca 22

 <210> 479
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 479
 tgggctgtag aagagttggtt g 21

 <210> 480
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 480
 tccacacttg gccagtttat 20

 <210> 481
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 481
 cccaacttct cccttttgga ccct 24

 <210> 482
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 482
 gtcccttcac tgtttagagc atga 24

 <210> 483
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 483
 actctcccc tcaacagcct cctgag 26

 <210> 484
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 484
 gtggtcaggg cagatccttt 20

 <210> 485
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 485
 acagatccag gagagactcc aca 23

 <210> 486
 <211> 21

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 486
 agcggcgctc ccagcctgaa t 21

 <210> 487
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 487
 catgattggc cctcagttcc atc 23

 <210> 488
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 488
 atagagggct cccagaagtg 20

 <210> 489
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 489
 cagggccttc agggccttca c 21

 <210> 490
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 490
 gctcagccaa acaactgtca 19

 <210> 491
 <211> 17
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 491
 ggggccctga cagtgtt 17

<210> 492
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 492
ctgagccgag actggagcat ctacac 26

<210> 493
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 493
gtgggcagcg tcttgct 17

<210> 494
<211> 1231
<212> DNA
<213> Homo Sapien

<400> 494
cccacgcgtc cgcgcagtcg cgcagttctg cctccgcctg ccagtctcgc 50
ccgcgatccc ggcccggggc tgtggcgctg actccgaccc aggcagccag 100
cagcccgcgc gggagccgga ccgccgccgg aggagctcgg acggcatgct 150
gagccccctc ctttgctgaa gcccgagtgc ggagaagccc gggcaaacgc 200
aggctaagga gaccaaagcg gcgaagtgc gagacagcgg acaagcagcg 250
gaggagaagg aggaggaggc gaaccagag aggggcagca aaagaagcgg 300
tgggtggtggg cgtcgtggcc atggcggcgg ctatcgccag ctcgctcatc 350
cgtcagaaga ggcaagcccc cgagcgcgag aaatccaacg cctgcaagtg 400
tgtcagcagc cccagcaaag gcaagaccag ctgcgacaaa aacaagttaa 450
atgtcttttc ccgggtcaaa ctcttcggct ccaagaagag gcgcagaaga 500
agaccagagc ctcagcttaa gggatatagt accaagctat acagccgaca 550
aggctaccac ttgcagctgc aggcggatgg aaccattgat ggcaccaaag 600
atgaggacag caattacact ctgtttaacc tcatccctgt gggctctgca 650
gtggtggcta tccaaggagt tcaaaccaag ctgtacttgg caatgaacag 700
tgagggatac ttgtacacct cggaactttt cacacctgag tgcaaattca 750
aagaatcagt gtttgaaaat tattatgtga catattcatc aatgatatac 800
cgtcagcagc agtcaggccg aggggtggtat ctgggtctga acaaagaagg 850
agagatcatg aaaggcaacc atgtgaagaa gaacaagcct gcagctcatt 900

gcctggacaa ggagggccag gtcatgaagg gaaaccgagt taagaagacc 1300
aaggcagctg cccactttct gcccaagctc ctggaggtgg ccatgtacca 1350
ggagccttct ctccacagtg tccccgaggc ctccccttcc agtccccctg 1400
ccccctgaaa tgtagtcctt ggactggagg ttcctgcac tcccagtgag 1450
ccagccacca ccacaacctg t 1471

<210> 497
<211> 225
<212> PRT
<213> Homo Sapien

<400> 497
Met Ala Ala Leu Ala Ser Ser Leu Ile Arg Gln Lys Arg Glu Val
1 5 10 15
Arg Glu Pro Gly Gly Ser Arg Pro Val Ser Ala Gln Arg Arg Val
20 25 30
Cys Pro Arg Gly Thr Lys Ser Leu Cys Gln Lys Gln Leu Leu Ile
35 40 45
Leu Leu Ser Lys Val Arg Leu Cys Gly Gly Arg Pro Ala Arg Pro
50 55 60
Asp Arg Gly Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu
65 70 75
Phe Cys Arg Gln Gly Phe Tyr Leu Gln Ala Asn Pro Asp Gly Ser
80 85 90
Ile Gln Gly Thr Pro Glu Asp Thr Ser Ser Phe Thr His Phe Asn
95 100 105
Leu Ile Pro Val Gly Leu Arg Val Val Thr Ile Gln Ser Ala Lys
110 115 120
Leu Gly His Tyr Met Ala Met Asn Ala Glu Gly Leu Leu Tyr Ser
125 130 135
Ser Pro His Phe Thr Ala Glu Cys Arg Phe Lys Glu Cys Val Phe
140 145 150
Glu Asn Tyr Tyr Val Leu Tyr Ala Ser Ala Leu Tyr Arg Gln Arg
155 160 165
Arg Ser Gly Arg Ala Trp Tyr Leu Gly Leu Asp Lys Glu Gly Gln
170 175 180
Val Met Lys Gly Asn Arg Val Lys Lys Thr Lys Ala Ala Ala His
185 190 195
Phe Leu Pro Lys Leu Leu Glu Val Ala Met Tyr Gln Glu Pro Ser
200 205 210
Leu His Ser Val Pro Glu Ala Ser Pro Ser Ser Pro Pro Ala Pro
215 220 225

<210> 498
<211> 744

<212> DNA
<213> Homo Sapien

<400> 498
atggccgcgg ccacgcctag cggcttgatc cgccagaagc ggcaggcgcg 50
ggagcagcac tgggaccggc cgtctgccag caggaggcgg agcagcccca 100
gcaagaaccg cgggctctgc aacggcaacc tgggtgatat cttctccaaa 150
gtgcgcacatc tgggocctca gaagcgcagg ttgcggcgcc aagatcccca 200
gctcaagggg atagtgacca gggttatattg caggcaaggc tactacttgc 250
aaatgcaccc cgatggagct ctcatggaa ccaaggatga cagcactaat 300
tctacactct tcaacctcat accagtggga ctacgtgttg ttgccatcca 350
gggagtgaaa acaggggttg atatagccat gaatggagaa ggttacctct 400
acccatcaga actttttacc cctgaatgca agtttaaaga atctgttttt 450
gaaaattatt atgtaatcta ctcatccatg ttgtacagac aacaggaatc 500
tggtagagcc tgggttttgg gattaaataa ggaagggcaa gctatgaaag 550
ggaacagagt aaagaaaacc aaaccagcag ctcattttct acccaagcca 600
ttggaagtgt ccatgtaccg agaaccatct ttgcatgatg ttgggggaaac 650
ggtcccgaag cctgggggtga cgccaagtaa aagcacaagt gcgtctgcaa 700
taatgaatgg aggcaaacca gtcaacaaga gtaagacaac atag 744

<210> 499
<211> 247
<212> PRT
<213> Homo Sapien

<400> 499
Met Ala Ala Ala Ile Ala Ser Gly Leu Ile Arg Gln Lys Arg Gln
1 5 10 15
Ala Arg Glu Gln His Trp Asp Arg Pro Ser Ala Ser Arg Arg Arg
20 25 30
Ser Ser Pro Ser Lys Asn Arg Gly Leu Cys Asn Gly Asn Leu Val
35 40 45
Asp Ile Phe Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg
50 55 60
Leu Arg Arg Gln Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu
65 70 75
Tyr Cys Arg Gln Gly Tyr Tyr Leu Gln Met His Pro Asp Gly Ala
80 85 90
Leu Asp Gly Thr Lys Asp Asp Ser Thr Asn Ser Thr Leu Phe Asn
95 100 105
Leu Ile Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Lys
110 115 120

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Leu | Tyr | Ile | Ala | Met | Asn | Gly | Glu | Gly | Tyr | Leu | Tyr | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Glu | Leu | Phe | Thr | Pro | Glu | Cys | Lys | Phe | Lys | Glu | Ser | Val | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Glu | Asn | Tyr | Tyr | Val | Ile | Tyr | Ser | Ser | Met | Leu | Tyr | Arg | Gln | Gln |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Glu | Ser | Gly | Arg | Ala | Trp | Phe | Leu | Gly | Leu | Asn | Lys | Glu | Gly | Gln |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ala | Met | Lys | Gly | Asn | Arg | Val | Lys | Lys | Thr | Lys | Pro | Ala | Ala | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Phe | Leu | Pro | Lys | Pro | Leu | Glu | Val | Ala | Met | Tyr | Arg | Glu | Pro | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | His | Asp | Val | Gly | Glu | Thr | Val | Pro | Lys | Pro | Gly | Val | Thr | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Lys | Ser | Thr | Ser | Ala | Ser | Ala | Ile | Met | Asn | Gly | Gly | Lys | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Asn | Lys | Ser | Lys | Thr | Thr | | | | | | | | |
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<210> 500
 <211> 2906
 <212> DNA
 <213> Homo Sapien

<400> 500
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 tggaaccgaa cgcaatggat aaactgattg tgcaagagag aaggaagaac 150
 gaagcttttt cttgtgagcc ctggatctta acacaaatgt gtatatgtgc 200
 acacagggag cattcaagaa tgaaataaac cagagttaga cccgcggggg 250
 ttggtgtggt ctgacataaa taaataatct taaagcagct gttccctcc 300
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 agaaaaaagt atgttcattt ttctctataa aggagaaagt gagccaagga 400
 gatatttttg gaatgaaaag tttggggcct ttttagtaaa gtaaagaact 450
 ggtgtggtgg tgttttcctt tctttttgaa tttcccacaa gaggagagga 500
 aattaataat acatctgcaa agaaatttca gagaagaaaa gttgaccgcg 550
 gcagattgag gcattgattg ggggagagaa accagcagag cacagttgga 600
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 caaaaa 2906

<210> 501
 <211> 640
 <212> PRT
 <213> Homo Sapien

<400> 501
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 35 40 45
 Thr Cys Pro Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val
 50 55 60
 Ile Cys Val Arg Lys Asn Leu Arg Glu Val Pro Asp Gly Ile Ser
 65 70 75
 Thr Asn Thr Arg Leu Leu Asn Leu His Glu Asn Gln Ile Gln Ile
 80 85 90
 Ile Lys Val Asn Ser Phe Lys His Leu Arg His Leu Glu Ile Leu
 95 100 105
 Gln Leu Ser Arg Asn His Ile Arg Thr Ile Glu Ile Gly Ala Phe
 110 115 120
 Asn Gly Leu Ala Asn Leu Asn Thr Leu Glu Leu Phe Asp Asn Arg
 125 130 135
 Leu Thr Thr Ile Pro Asn Gly Ala Phe Val Tyr Leu Ser Lys Leu
 140 145 150
 Lys Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser
 155 160 165

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ala | Phe | Asn | Arg | Ile | Pro | Ser | Leu | Arg | Arg | Leu | Asp | Leu | Gly | 170 | 175 | 180 |
| Glu | Leu | Lys | Arg | Leu | Ser | Tyr | Ile | Ser | Glu | Gly | Ala | Phe | Glu | Gly | 185 | 190 | 195 |
| Leu | Ser | Asn | Leu | Arg | Tyr | Leu | Asn | Leu | Ala | Met | Cys | Asn | Leu | Arg | 200 | 205 | 210 |
| Glu | Ile | Pro | Asn | Leu | Thr | Pro | Leu | Ile | Lys | Leu | Asp | Glu | Leu | Asp | 215 | 220 | 225 |
| Leu | Ser | Gly | Asn | His | Leu | Ser | Ala | Ile | Arg | Pro | Gly | Ser | Phe | Gln | 230 | 235 | 240 |
| Gly | Leu | Met | His | Leu | Gln | Lys | Leu | Trp | Met | Ile | Gln | Ser | Gln | Ile | 245 | 250 | 255 |
| Gln | Val | Ile | Glu | Arg | Asn | Ala | Phe | Asp | Asn | Leu | Gln | Ser | Leu | Val | 260 | 265 | 270 |
| Glu | Ile | Asn | Leu | Ala | His | Asn | Asn | Leu | Thr | Leu | Leu | Pro | His | Asp | 275 | 280 | 285 |
| Leu | Phe | Thr | Pro | Leu | His | His | Leu | Glu | Arg | Ile | His | Leu | His | His | 290 | 295 | 300 |
| Asn | Pro | Trp | Asn | Cys | Asn | Cys | Asp | Ile | Leu | Trp | Leu | Ser | Trp | Trp | 305 | 310 | 315 |
| Ile | Lys | Asp | Met | Ala | Pro | Ser | Asn | Thr | Ala | Cys | Cys | Ala | Arg | Cys | 320 | 325 | 330 |
| Asn | Thr | Pro | Pro | Asn | Leu | Lys | Gly | Arg | Tyr | Ile | Gly | Glu | Leu | Asp | 335 | 340 | 345 |
| Gln | Asn | Tyr | Phe | Thr | Cys | Tyr | Ala | Pro | Val | Ile | Val | Glu | Pro | Pro | 350 | 355 | 360 |
| Ala | Asp | Leu | Asn | Val | Thr | Glu | Gly | Met | Ala | Ala | Glu | Leu | Lys | Cys | 365 | 370 | 375 |
| Arg | Ala | Ser | Thr | Ser | Leu | Thr | Ser | Val | Ser | Trp | Ile | Thr | Pro | Asn | 380 | 385 | 390 |
| Gly | Thr | Val | Met | Thr | His | Gly | Ala | Tyr | Lys | Val | Arg | Ile | Ala | Val | 395 | 400 | 405 |
| Leu | Ser | Asp | Gly | Thr | Leu | Asn | Phe | Thr | Asn | Val | Thr | Val | Gln | Asp | 410 | 415 | 420 |
| Thr | Gly | Met | Tyr | Thr | Cys | Met | Val | Ser | Asn | Ser | Val | Gly | Asn | Thr | 425 | 430 | 435 |
| Thr | Ala | Ser | Ala | Thr | Leu | Asn | Val | Thr | Ala | Ala | Thr | Thr | Thr | Pro | 440 | 445 | 450 |
| Phe | Ser | Tyr | Phe | Ser | Thr | Val | Thr | Val | Glu | Thr | Met | Glu | Pro | Ser | 455 | 460 | 465 |
| Gln | Asp | Glu | Ala | Arg | Thr | Thr | Asp | Asn | Asn | Val | Gly | Pro | Thr | Pro | 470 | 475 | 480 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Val | Asp | Trp | Glu | Thr | Thr | Asn | Val | Thr | Thr | Ser | Leu | Thr | Pro |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Gln | Ser | Thr | Arg | Ser | Thr | Glu | Lys | Thr | Phe | Thr | Ile | Pro | Val | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Asp | Ile | Asn | Ser | Gly | Ile | Pro | Gly | Ile | Asp | Glu | Val | Met | Lys | Thr |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Thr | Lys | Ile | Ile | Ile | Gly | Cys | Phe | Val | Ala | Ile | Thr | Leu | Met | Ala |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Ala | Val | Met | Leu | Val | Ile | Phe | Tyr | Lys | Met | Arg | Lys | Gln | His | His |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Arg | Gln | Asn | His | His | Ala | Pro | Thr | Arg | Thr | Val | Glu | Ile | Ile | Asn |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Val | Asp | Asp | Glu | Ile | Thr | Gly | Asp | Thr | Pro | Met | Glu | Ser | His | Leu |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Pro | Met | Pro | Ala | Ile | Glu | His | Glu | His | Leu | Asn | His | Tyr | Asn | Ser |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Tyr | Lys | Ser | Pro | Phe | Asn | His | Thr | Thr | Thr | Val | Asn | Thr | Ile | Asn |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Ser | Ile | His | Ser | Ser | Val | His | Glu | Pro | Leu | Leu | Ile | Arg | Met | Asn |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Ser | Lys | Asp | Asn | Val | Gln | Glu | Thr | Gln | Ile | | | | | |
| | | | | 635 | | | | | 640 | | | | | |

<210> 502
 <211> 2458
 <212> DNA
 <213> Homo Sapien

<400> 502
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 ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150
 agcaactgag cggggaagcg cccgcgtccg gggatcgga tgtccctcct 200
 ccttctcctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250
 ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300
 caactggggc ttccagaaaa agacactctg gatattgaat ggctgctcac 350
 cgataatgaa gggaacccaa aagtggatgat cacttactcc agtcgtcatg 400
 tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450
 aatttcctgg caggagatgc ctcccttgag attgaacctc tgaagcccag 500
 tgatgagggc cggtacacct gtaagggttaa gaattcaggg cgctacgtgt 550
 ggagccatgt catcttaaaa gtcttagtga gaccatccaa gcccaagtgt 600

gagttggaag gagagctgac agaaggaagt gacctgactt tgcagtgtga 650
 gtcacacctct ggcacagagc ccattgtgta ttactggcag cgaatccgag 700
 agaaagaggg agaggatgaa cgtctgcctc ccaaacttag gattgactac 750
 aaccacacctg gaogagttct gctgcagaat cttaccatgt cctactctgg 800
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 ccagaggatga gaggttctga accaaagaaa gtccaccatg ctaactctgac 1250
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 ccagatgaga ggtcatctaa gtagcagtga gcattgcacg gaacagattc 1450
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 gattcatctg taaaaaggca tcttattgtg ccttttagacc agagtaaggg 1550
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 agaaaataca acatgtcatt tatcaacgtc cttagaaaga attcttctag 2200

| | | | |
|-----------------|---------------------|---------------------|-----|
| Gln Tyr Val Gln | Ser Ile Gly Met Val | Ala Gly Ala Val Thr | Gly |
| | 230 | 235 | 240 |
| Ile Val Ala Gly | Ala Leu Leu Ile Phe | Leu Leu Val Trp Leu | Leu |
| | 245 | 250 | 255 |
| Ile Arg Arg Lys | Asp Lys Glu Arg Tyr | Glu Glu Glu Glu Arg | Pro |
| | 260 | 265 | 270 |
| Asn Glu Ile Arg | Glu Asp Ala Glu Ala | Pro Lys Ala Arg Leu | Val |
| | 275 | 280 | 285 |
| Lys Pro Ser Ser | Ser Ser Ser Gly Ser | Arg Ser Ser Arg Ser | Gly |
| | 290 | 295 | 300 |
| Ser Ser Ser Thr | Arg Ser Thr Ala Asn | Ser Ala Ser Arg Ser | Gln |
| | 305 | 310 | 315 |
| Arg Thr Leu Ser | Thr Asp Ala Ala Pro | Gln Pro Gly Leu Ala | Thr |
| | 320 | 325 | 330 |
| Gln Ala Tyr Ser | Leu Val Gly Pro Glu | Val Arg Gly Ser Glu | Pro |
| | 335 | 340 | 345 |
| Lys Lys Val His | His Ala Asn Leu Thr | Lys Ala Glu Thr Thr | Pro |
| | 350 | 355 | 360 |
| Ser Met Ile Pro | Ser Gln Ser Arg Ala | Phe Gln Thr Val | |
| | 365 | 370 | |

<210> 504
 <211> 3060
 <212> DNA
 <213> Homo Sapien

<400> 504
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 ctctgtgctg gagtagtgga tttcgccaga agtttgagta tcactactcc 150
 tgaagagatg attgaaaaag ccaaagggga aactgcctat ctgccatgca 200
 aatttacgct tagtcccga gaccaggac cgctggacat cgagtggctg 250
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 tggagacaaa atttatgatg actactatcc agatctgaaa ggccgagtac 350
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 aatttacaac tgtcagatat tggcacatat cagtgcaaag tgaaaaaagc 450
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 aagataaaat gtgaacacaaa agaaggttca cttccattac agtatgagtg 600
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 tgacttcac tggttatatct gtaaaaaatg cctcttctga gtactctggg 700

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aggtggaat ataagttctg aaatctgtag ggaagagaac acattaagtt 2300

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 125 | | 130 | | 135 |
| Val Val Leu Val | Lys Pro Ser Gly Ala | Arg Cys Tyr Val Asp | Gly | | |
| | 140 | 145 | 150 | | |
| Ser Glu Glu Ile | Gly Ser Asp Phe Lys | Ile Lys Cys Glu Pro | Lys | | |
| | 155 | 160 | 165 | | |
| Glu Gly Ser Leu | Pro Leu Gln Tyr Glu | Trp Gln Lys Leu Ser | Asp | | |
| | 170 | 175 | 180 | | |
| Ser Gln Lys Met | Pro Thr Ser Trp Leu | Ala Glu Met Thr Ser | Ser | | |
| | 185 | 190 | 195 | | |
| Val Ile Ser Val | Lys Asn Ala Ser Ser | Glu Tyr Ser Gly Thr | Tyr | | |
| | 200 | 205 | 210 | | |
| Ser Cys Thr Val | Arg Asn Arg Val Gly | Ser Asp Gln Cys Leu | Leu | | |
| | 215 | 220 | 225 | | |
| Arg Leu Asn Val | Val Pro Pro Ser Asn | Lys Ala Gly Leu Ile | Ala | | |
| | 230 | 235 | 240 | | |
| Gly Ala Ile Ile | Gly Thr Leu Leu Ala | Leu Ala Leu Ile Gly | Leu | | |
| | 245 | 250 | 255 | | |
| Ile Ile Phe Cys | Cys Arg Lys Lys Arg | Arg Glu Glu Lys Tyr | Glu | | |
| | 260 | 265 | 270 | | |
| Lys Glu Val His | His Asp Ile Arg Glu | Asp Val Pro Pro Pro | Lys | | |
| | 275 | 280 | 285 | | |
| Ser Arg Thr Ser | Thr Ala Arg Ser Tyr | Ile Gly Ser Asn His | Ser | | |
| | 290 | 295 | 300 | | |
| Ser Leu Gly Ser | Met Ser Pro Ser Asn | Met Glu Gly Tyr Ser | Lys | | |
| | 305 | 310 | 315 | | |
| Thr Gln Tyr Asn | Gln Val Pro Ser Glu | Asp Phe Glu Arg Thr | Pro | | |
| | 320 | 325 | 330 | | |
| Gln Ser Pro Thr | Leu Pro Pro Ala Lys | Phe Lys Tyr Pro Tyr | Lys | | |
| | 335 | 340 | 345 | | |
| Thr Asp Gly Ile | Thr Val Val | | | | |
| | 350 | | | | |

<210> 506
 <211> 1705
 <212> DNA
 <213> Homo Sapien

<400> 506
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 ccagctgcct ccaggcagcc agccctcaag catcacttac aggaccagag 150
 ggacaagaca tgactgtgat gaggagctgc tttcgccaat ttaacaccaa 200
 gaagaattga ggctgcttgg gaggaaggcc aggaggaaca cgagactgag 250

agatgaatTT tcaacagagg ctgcaaagcc tgtggactTT agccagaccc 300
 ttctgccctc ctttgcTggc gacagcctct caaatgcaga tggTtTgtgt 350
 cccttgccTg ggtttttaccc tgcttctctg gagccaggta tcagggggccc 400
 agggccaaga attccactTT gggccctgcc aagtgaaggg ggtTgttccc 450
 cagaaactgt ggggaagcctt ctgggctgtg aaagacacta tgcaagctca 500
 ggataacatc acgagtgcCC ggctgctgca gcaggaggTt ctgcagaacg 550
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 totgaagtca ttctctactc tggccaacaa ctttgttctc atcgtgtcac 700
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 cacaggcggt ttctgctatt ccggagagca ttcaaacagt tggacgtaga 800
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 ggattattgt caaagaagtc attctttaag cagcgccagt gacagtcagg 1050
 gaaggtgcct ctggatgctg tgaagagtct acagagaaga ttcttgtatt 1100
 tattacaact ctatttaatt aatgtcagta tttcaactga agttctattt 1150
 atttgtgaga ctgtaagtta catgaaggca gcagaatatt gtgccccatg 1200
 cttctttacc cctcacaatc cttgccacag tgtggggcag tggatgggtg 1250
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 aaaaa 1705

<210> 507
 <211> 206
 <212> PRT

<213> Homo Sapien

<400> 507

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Asn | Phe | Gln | Gln | Arg | Leu | Gln | Ser | Leu | Trp | Thr | Leu | Ala | Arg | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Pro | Phe | Cys | Pro | Pro | Leu | Leu | Ala | Thr | Ala | Ser | Gln | Met | Gln | Met | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Val | Leu | Pro | Cys | Leu | Gly | Phe | Thr | Leu | Leu | Leu | Trp | Ser | Gln | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Ser | Gly | Ala | Gln | Gly | Gln | Glu | Phe | His | Phe | Gly | Pro | Cys | Gln | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Lys | Gly | Val | Val | Pro | Gln | Lys | Leu | Trp | Glu | Ala | Phe | Trp | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Lys | Asp | Thr | Met | Gln | Ala | Gln | Asp | Asn | Ile | Thr | Ser | Ala | Arg | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Leu | Gln | Gln | Glu | Val | Leu | Gln | Asn | Val | Ser | Asp | Ala | Glu | Ser | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | Tyr | Leu | Val | His | Thr | Leu | Leu | Glu | Phe | Tyr | Leu | Lys | Thr | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Phe | Lys | Asn | His | His | Asn | Arg | Thr | Val | Glu | Val | Arg | Thr | Leu | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Phe | Ser | Thr | Leu | Ala | Asn | Asn | Phe | Val | Leu | Ile | Val | Ser | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Leu | Gln | Pro | Ser | Gln | Glu | Asn | Glu | Met | Phe | Ser | Ile | Arg | Asp | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | His | Arg | Arg | Phe | Leu | Leu | Phe | Arg | Arg | Ala | Phe | Lys | Gln | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asp | Val | Glu | Ala | Ala | Leu | Thr | Lys | Ala | Leu | Gly | Glu | Val | Asp | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Leu | Thr | Trp | Met | Gln | Lys | Phe | Tyr | Lys | Leu | | | | | |
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<211> 924

<212> DNA

<213> Homo Sapien

<400> 508

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gtttccaaga aatcaaaaaga gccatccaag ctaaggacac cttcccaa 200
gtcactatcc tgtccacatt ggagactctg cagatcatta agcccttaga 250
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<210> 509

<211> 177

<212> PRT

<213> Homo Sapien

<400> 509

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| Met | Lys | Leu | Gln | Cys | Val | Ser | Leu | Trp | Leu | Leu | Gly | Thr | Ile | Leu | 1 | 5 | 10 | 15 |
| Ile | Leu | Cys | Ser | Val | Asp | Asn | His | Gly | Leu | Arg | Arg | Cys | Leu | Ile | 20 | 25 | 30 | |
| Ser | Thr | Asp | Met | His | His | Ile | Glu | Glu | Ser | Phe | Gln | Glu | Ile | Lys | 35 | 40 | 45 | |
| Arg | Ala | Ile | Gln | Ala | Lys | Asp | Thr | Phe | Pro | Asn | Val | Thr | Ile | Leu | 50 | 55 | 60 | |
| Ser | Thr | Leu | Glu | Thr | Leu | Gln | Ile | Ile | Lys | Pro | Leu | Asp | Val | Cys | 65 | 70 | 75 | |
| Cys | Val | Thr | Lys | Asn | Leu | Leu | Ala | Phe | Tyr | Val | Asp | Arg | Val | Phe | 80 | 85 | 90 | |
| Lys | Asp | His | Gln | Glu | Pro | Asn | Pro | Lys | Ile | Leu | Arg | Lys | Ile | Ser | 95 | 100 | 105 | |
| Ser | Ile | Ala | Asn | Ser | Phe | Leu | Tyr | Met | Gln | Lys | Thr | Leu | Arg | Gln | 110 | 115 | 120 | |
| Cys | Gln | Glu | Gln | Arg | Gln | Cys | His | Cys | Arg | Gln | Glu | Ala | Thr | Asn | 125 | 130 | 135 | |
| Ala | Thr | Arg | Val | Ile | His | Asp | Asn | Tyr | Asp | Gln | Leu | Glu | Val | His | 140 | 145 | 150 | |
| Ala | Ala | Ala | Ile | Lys | Ser | Leu | Gly | Glu | Leu | Asp | Val | Phe | Leu | Ala | | | | |

165

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<211> 996
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399

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| Leu | Leu | Gly | Ser | Ser | Trp | Gly | Gly | Leu | Ile | His | Leu | Tyr | Thr | Ala | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Ala | Arg | Asn | Ser | Tyr | His | Leu | Gln | Ile | His | Lys | Asn | Gly | His | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Asp | Gly | Ala | Pro | His | Gln | Thr | Ile | Tyr | Ser | Ala | Leu | Met | Ile | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Arg | Ser | Glu | Asp | Ala | Gly | Phe | Val | Val | Ile | Thr | Gly | Val | Met | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Arg | Arg | Tyr | Leu | Cys | Met | Asp | Phe | Arg | Gly | Asn | Ile | Phe | Gly | Ser | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| His | Tyr | Phe | Asp | Pro | Glu | Asn | Cys | Arg | Phe | Gln | His | Gln | Thr | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Glu | Asn | Gly | Tyr | Asp | Val | Tyr | His | Ser | Pro | Gln | Tyr | His | Phe | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Ser | Leu | Gly | Arg | Ala | Lys | Arg | Ala | Phe | Leu | Pro | Gly | Met | Asn | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Pro | Pro | Tyr | Ser | Gln | Phe | Leu | Ser | Arg | Arg | Asn | Glu | Ile | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Ile | His | Phe | Asn | Thr | Pro | Ile | Pro | Arg | Arg | His | Thr | Arg | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Glu | Asp | Asp | Ser | Glu | Arg | Asp | Pro | Leu | Asn | Val | Leu | Lys | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Arg | Ala | Arg | Met | Thr | Pro | Ala | Pro | Ala | Ser | Cys | Ser | Gln | Glu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Pro | Ser | Ala | Glu | Asp | Asn | Ser | Pro | Met | Ala | Ser | Asp | Pro | Leu | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Val | Val | Arg | Gly | Gly | Arg | Val | Asn | Thr | His | Ala | Gly | Gly | Thr | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Pro | Glu | Gly | Cys | Arg | Pro | Phe | Ala | Lys | Phe | Ile | | | | | |
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 <212> DNA
 <213> Homo Sapien

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Thr | Glu | Ile | Glu | Thr | Thr | Thr | Ser | Ser | Ile | Pro | Gly | Ala | Ser | Asp | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ile | Asp | Leu | Ile | Pro | Thr | Glu | Gly | Val | Lys | Ala | Ser | Ser | Thr | Ser | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Pro | Pro | Ala | Leu | Pro | Asp | Ser | Thr | Glu | Ala | Lys | Pro | His | Ile | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Thr | Glu | Val | Thr | Ala | Ser | Ala | Glu | Thr | Leu | Ser | Thr | Ala | Gly | Thr | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Glu | Ser | Ala | Ala | Pro | His | Ala | Thr | Val | Gly | Thr | Pro | Leu | Pro | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Thr | Asn | Ser | Ala | Thr | Glu | Arg | Glu | Val | Thr | Ala | Pro | Gly | Ala | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Thr | Leu | Ser | Gly | Ala | Leu | Val | Thr | Val | Ser | Arg | Asn | Pro | Leu | Glu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Thr | Ser | Ala | Leu | Ser | Val | Glu | Thr | Pro | Ser | Tyr | Val | Lys | Val | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ser | Gly | Ala | Ala | Pro | Val | Ser | Ile | Glu | Ala | Gly | Ser | Ala | Val | Gly | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Lys | Thr | Thr | Ser | Phe | Ala | Gly | Ser | Ser | Ala | Ser | Ser | Tyr | Ser | Pro | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Ser | Glu | Ala | Ala | Leu | Lys | Asn | Phe | Thr | Pro | Ser | Glu | Thr | Pro | Thr | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Met | Asp | Ile | Ala | Thr | Lys | Gly | Pro | Phe | Pro | Thr | Ser | Arg | Asp | Pro | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Leu | Pro | Ser | Val | Pro | Pro | Thr | Thr | Thr | Asn | Ser | Ser | Arg | Gly | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Asn | Ser | Thr | Leu | Ala | Lys | Ile | Thr | Thr | Ser | Ala | Lys | Thr | Thr | Met | |
| | | | | 455 | | | | | 460 | | | | | 465 | |
| Lys | Pro | Gln | Gln | Pro | Arg | Pro | Arg | Leu | Pro | Gly | Arg | Gly | Arg | Pro | |
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Gln Thr

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<211> 2284

<212> DNA

<213> Homo Sapien

<400> 514

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cttcttaaag caaactaaga ccagagggag gattatcctt gacctttgaa 200

gacaaaaact aaactgaaat ttaaaatggt cttcggggga gaaggagct 250

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 acacctgggt gatttttgta ttttagtag agacggggtt tcaccatggt 1850

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Ala | Tyr | Lys | Glu | Lys | Gly | His | Ser | Gln | Ser | Ser | Gln | Phe | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Asp | Gln | Glu | Ile | Ala | His | Leu | Leu | Pro | Glu | Asn | Val | Ser | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Pro | Ala | Thr | Val | Ala | Val | Ala | Ser | Pro | His | Thr | Thr | Ser | Ala | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Thr | Pro | Lys | Pro | Ala | Thr | Leu | Leu | Pro | Thr | Asn | Ala | Ser | Val | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Pro | Ser | Gly | Thr | Ser | Gln | Pro | Gln | Leu | Ala | Thr | Thr | Ala | Pro | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Val | Thr | Thr | Val | Thr | Ser | Gln | Pro | Pro | Thr | Thr | Leu | Ile | Ser | Thr | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Val | Phe | Thr | Arg | Ala | Ala | Ala | Thr | Leu | Gln | Ala | Met | Ala | Thr | Thr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Val | Leu | Thr | Thr | Thr | Phe | Gln | Ala | Pro | Thr | Asp | Ser | Lys | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ser | Leu | Glu | Thr | Ile | Pro | Phe | Thr | Glu | Ile | Ser | Asn | Leu | Thr | Leu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Asn | Thr | Gly | Asn | Val | Tyr | Asn | Pro | Thr | Ala | Leu | Ser | Met | Ser | Asn | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Val | Glu | Ser | Ser | Thr | Met | Asn | Lys | Thr | Ala | Ser | Trp | Glu | Gly | Arg | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Ala | Ser | Pro | Gly | Ser | Ser | Ser | Gln | Gly | Ser | Val | Pro | Glu | Asn | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gln | Tyr | Gly | Leu | Pro | Phe | Glu | Lys | Trp | Leu | Leu | Ile | Gly | Ser | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Phe | Gly | Val | Leu | Phe | Leu | Val | Ile | Gly | Leu | Val | Leu | Leu | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Arg | Ile | Leu | Ser | Glu | Ser | Leu | Arg | Arg | Lys | Arg | Tyr | Ser | Arg | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Asp | Tyr | Leu | Ile | Asn | Gly | Ile | Tyr | Val | Asp | Ile | | | | | |
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 <212> DNA
 <213> Homo Sapien

<220>
 <221> unsure
 <222> 1869, 1887
 <223> unknown base

<400> 516
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 35 40 45
 His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
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 Cys Ser Gly Thr Ile Tyr Ala Glu Glu Gly Gln Glu Thr Met
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu | |
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| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr | |
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| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile | |
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| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser | |
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| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala | |
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| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | |
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| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | |
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| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | |
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| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro | |
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| Ala | Gly | Ser | Ser | Arg | Pro | Pro | Met | Gln | Leu | Asp | Ser | Thr | Ser | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Glu | Asp | Thr | Ser | Pro | Ala | Leu | Ser | Ser | Gly | Ser | Ser | Lys | Pro | Arg | |
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| Val | Ser | Ile | Pro | Met | Val | Arg | Ile | Leu | Ala | Pro | Val | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Ser | Leu | Leu | Ser | Ala | Ala | Gly | Leu | Ile | Ala | Phe | Cys | Ser | His | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Leu | Leu | Trp | Arg | Lys | Glu | Ala | Gln | Gln | Ala | Thr | Glu | Thr | Gln | |
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| Arg | Asn | Glu | Lys | Phe | Trp | Leu | Ser | Arg | Leu | Thr | Ala | Glu | Glu | Lys | |
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| Glu | Ala | Pro | Ser | Gln | Ala | Pro | Glu | Gly | Asp | Val | Ile | Ser | Met | Pro | |
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| Pro | Leu | His | Thr | Ser | Glu | Glu | Glu | Leu | Gly | Phe | Ser | Lys | Phe | Val | |
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